South Atlantic Coastal Study

Report Roll-out Meeting: South Carolina
October 26, 2021

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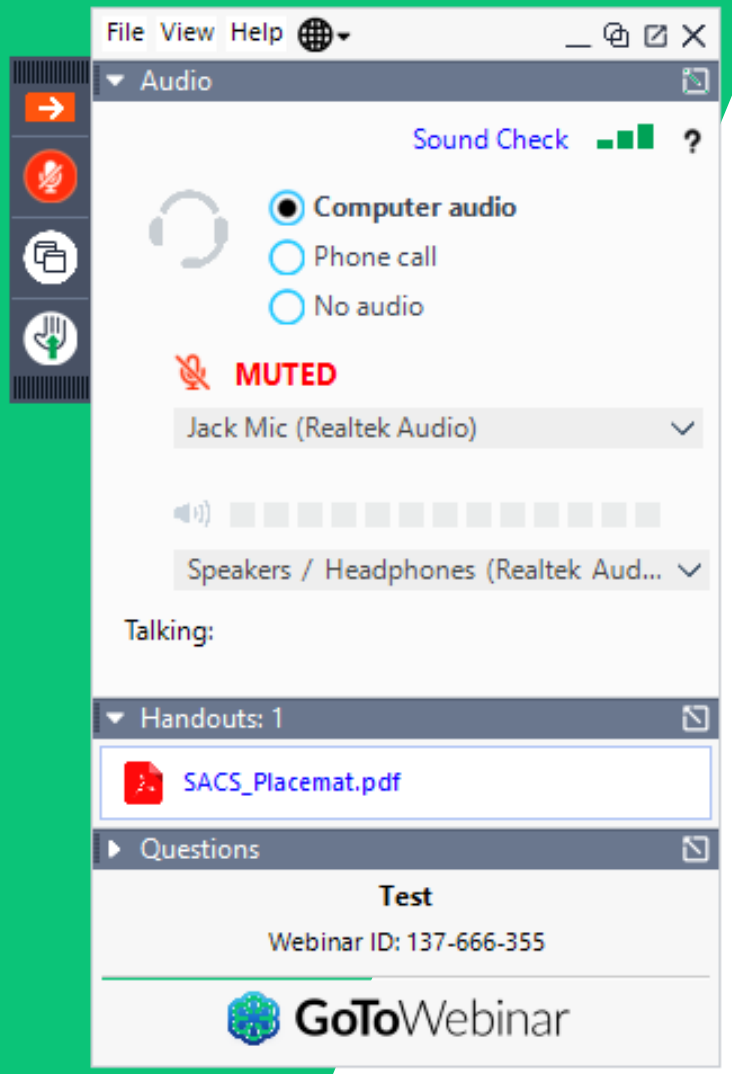

- **Lines will start as muted but can be opened for discussion. Please mute yourself when not speaking to limit background noise.**
  - Use the raise hand feature to alert staff you have a comment
- **Questions and comments can also be submitted via the chat box throughout the presentation**
  - If having technical difficulties reach out via chat to staff.
- **A PDF of the slides is available in the Handouts section.**

USACE & Facilitator Team

USACE District Team:

Diane Perkins	PM/Planner
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Andrea Farmer	Archaeologist
Lindsay LaRoque	Engineer
Jennifer Kist	GIS

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Devin Schultze	Facilitator

USACE Regional Team:

Ashleigh Fountain	Project Manager
Matt Schrader	Planning
Trevor Lancaster	Geospatial
Drew Condon	Engineering
Lisa Clark	Outreach
Kristina May	Environmental
Idris Dobbs	Economics
Clay McCoy	RSM

Virtual Poll – Who do you represent?

- Tribal Nation
- Federal Agency
- State/Local Agency
- Academia
- Non-Profit

South Atlantic Coastal Study (SACS) Report Roll-out Meeting: Agenda

Intro / Purpose	SACS Background	Overview of Reports	Comment Collection
• Introductions • Meeting Purpose • Link to Released Report	• Shared Vision • Study Area • Study Framework	• Main Report • Technical Appendices • Geoportal • South Carolina Appendix • Focus Area Action Strategies	• Report Access • Comment Collection • Feedback Consideration

Meeting Purpose

1. Provide a brief overview of the South Atlantic Coastal Study (SACS) reports and products
2. Present DRAFT SACS findings and recommendations for South Carolina
3. Walk through report structure and organization to facilitate stakeholder review

SACS Report Now Available

https://www.sad.usace.army.mil/SACS/

South Atlantic Coastal Study - SACS

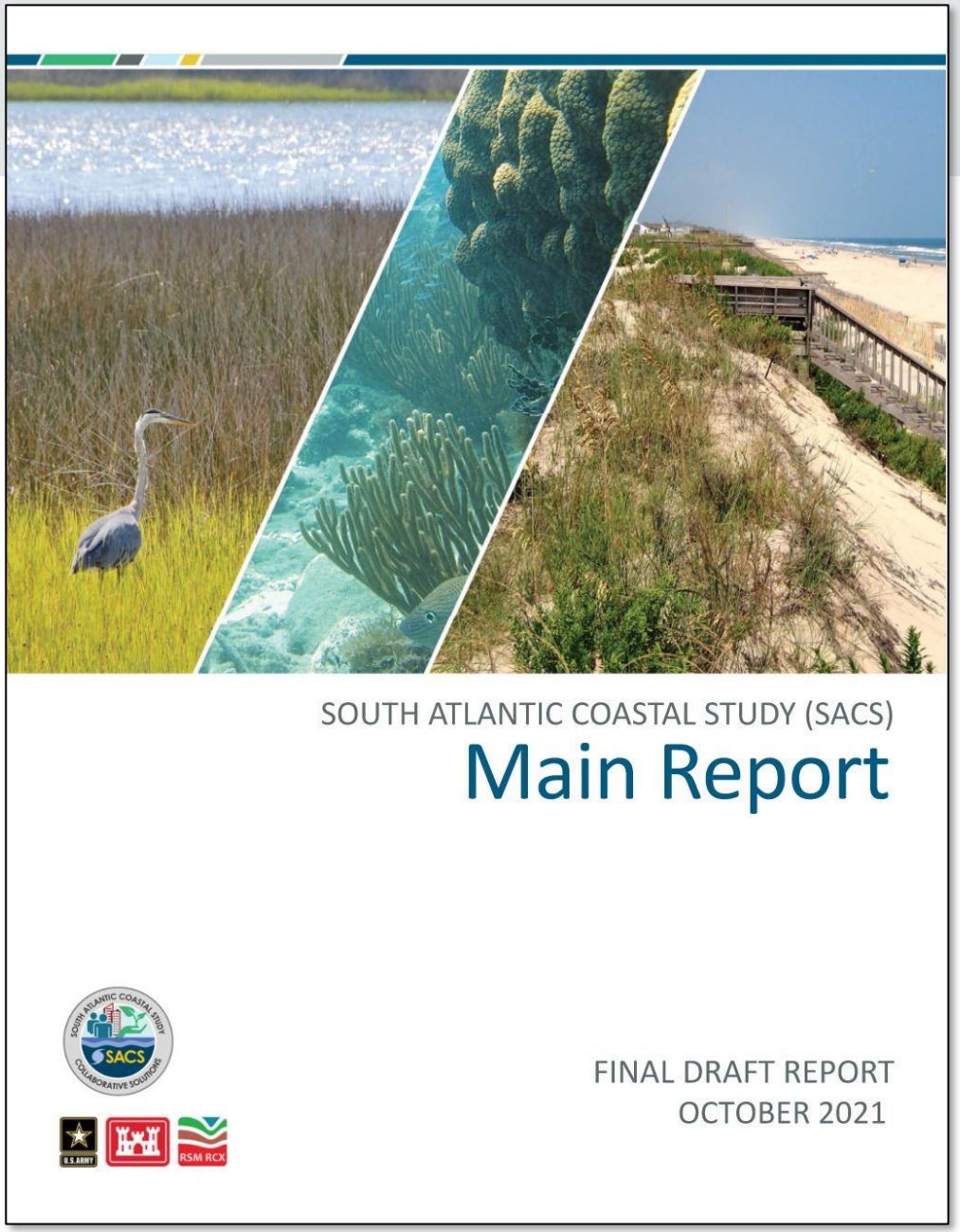
SACS Shared Vision

The SACS vision is to provide a common understanding of risk from coastal storms and sea level rise to support resilient communities and habitats. This collaborative effort will leverage stakeholders' actions to plan and implement cohesive coastal storm risk management strategies along the South Atlantic and Gulf Coast shorelines, including the territories of Puerto Rico and the U.S. Virgin Islands.

SACS Draft Reports

SACS Draft Reports are available for review and comment through November 15, 2021. Comments can be provided through the following form: https://www.surveymonkey.com/r/SACS_comments

SACS Main Report	Outreach Appendix	Florida Appendix	Puerto Rico Appendix
Engineering Appendix	Alabama Appendix	Mississippi Appendix	South Carolina Appendix
Geospatial Appendix	Georgia Appendix	North Carolina Appendix	U.S. Virgin Islands Appendix
Recommendations Summary Spreadsheet			



SACS Background

Virtual Poll – What involvement have you had in the SACS process?

Attended Field Workshop (Fall 2019)

Attended Focus Area Webinars (July – Dec 2020)

Attended Environmental/ Cultural/ Military Webinars (July – Dec 2020)

Attended Any SACS Quarterly Webinar

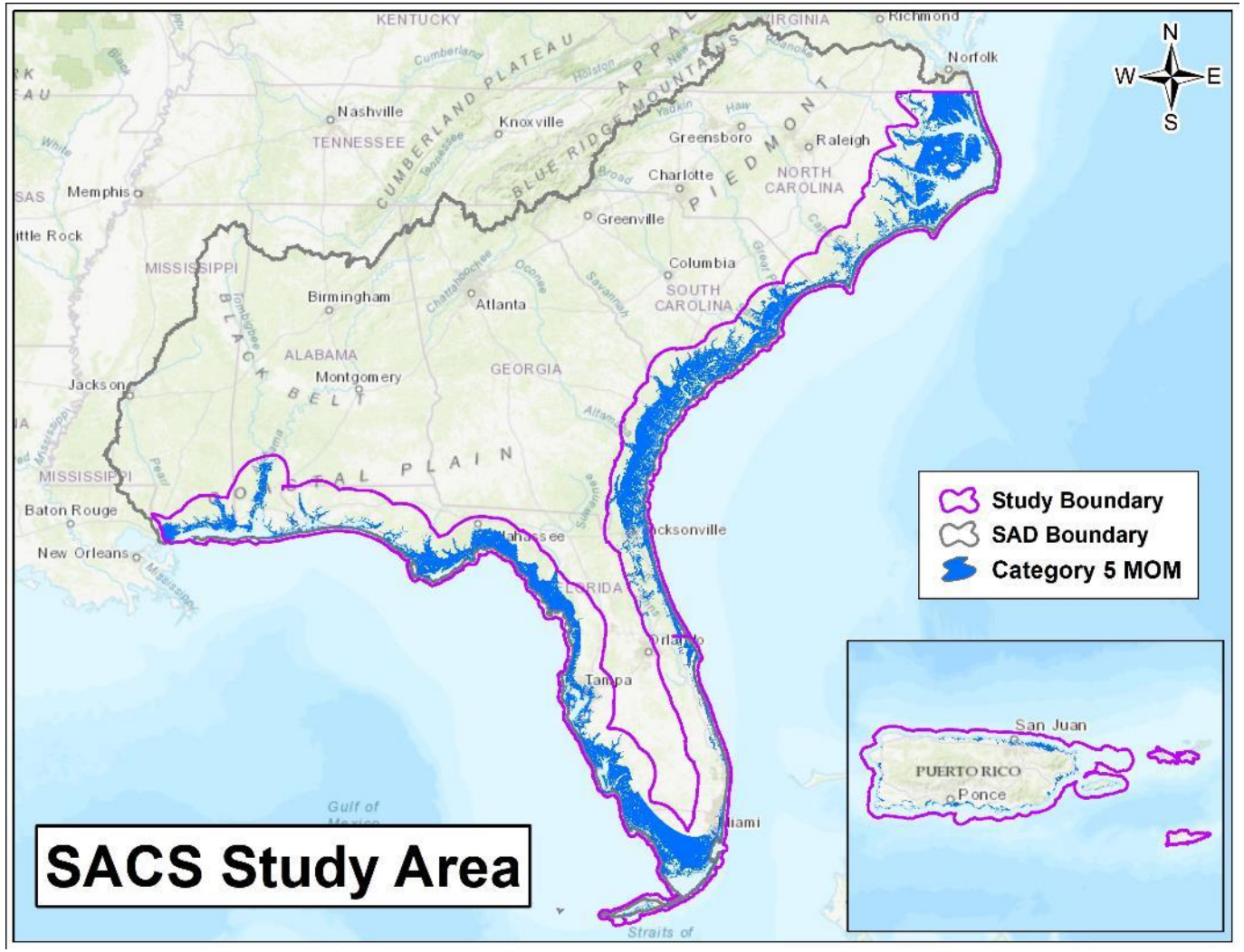
No Previous Involvement

SACS Shared Vision

The SACS vision is to provide a common understanding of risk from coastal storms and sea level rise to support resilient communities and habitats. This collaborative effort will leverage stakeholders' actions to plan and implement cohesive coastal storm risk management strategies along the South Atlantic and Gulf Coast shorelines, including the territories of Puerto Rico and the U.S. Virgin Islands.

Study Area

- Approximately 65,000 miles of tidally influenced coastline
  - in the South Atlantic Division area of responsibility
  - affected by sea level rise (SLR) where hurricane and storm damages are occurring
  - or are forecast to occur.



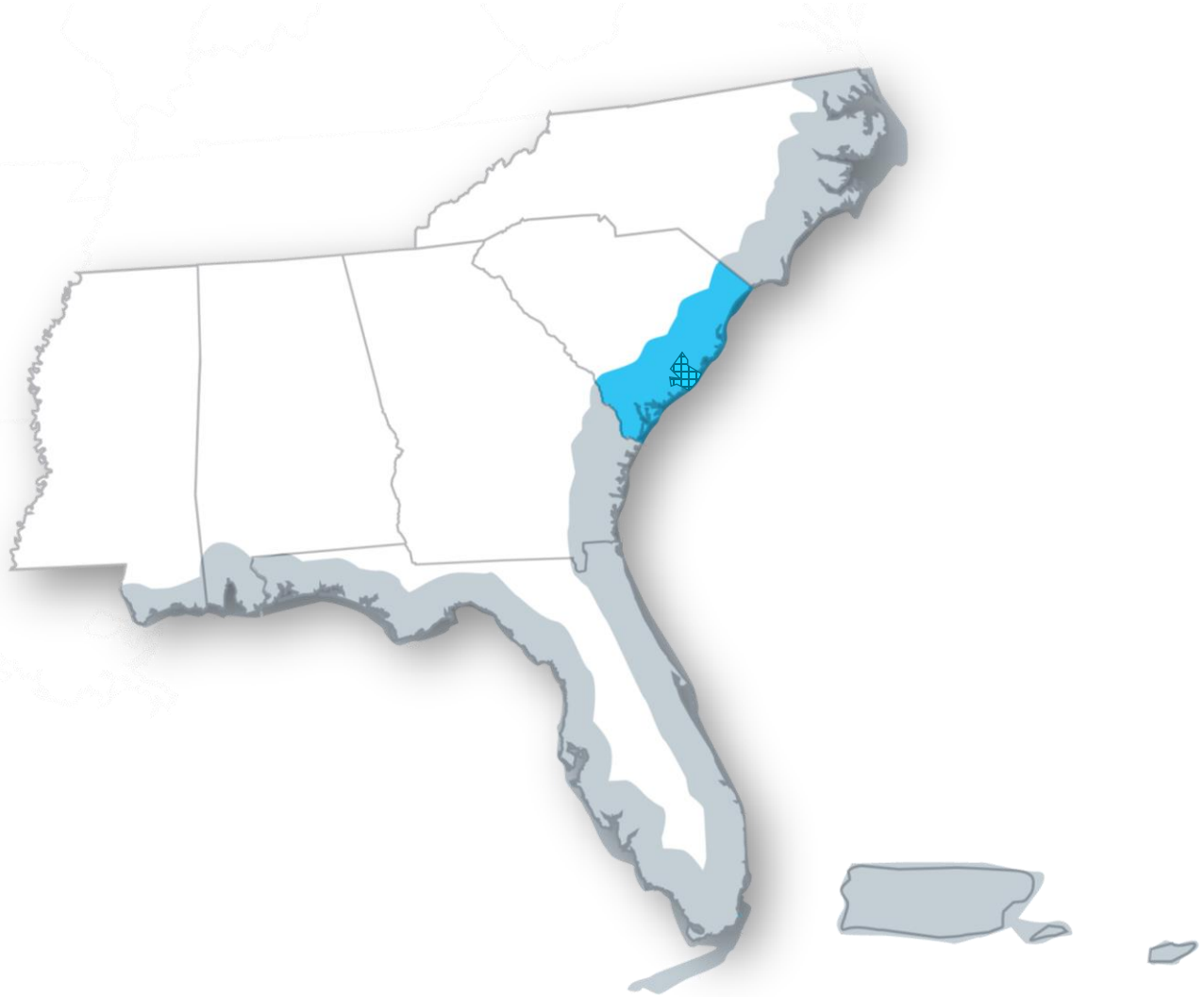
Applying the Framework

COASTAL STORM RISK MANAGEMENT FRAMEWORK		TIER 1 FULL STUDY AREA	TIER 2 STATE/TERRITORY	TIER 2 FOCUS AREA
1	INITIATE ANALYSIS	Stakeholder collaboration to identify study problems, opportunities, and goals and develop a shared vision statement.	Stakeholder collaboration workshops to identify state- and territory-specific problems, opportunities, and constraints.	Focus-area-specific vision meetings with stakeholders. Identify problems, opportunities, and leverage stakeholders for ongoing and planned work.
2	CHARACTERIZE CONDITIONS	Tier 1 risk assessment uses national level datasets to characterize conditions, including FEMA, NOAA, and other federal agency data.	Higher-resolution information is applied: Priority Environmental Area Identification, consideration of erosion and additional coastal hazards.	Depending upon the level of work previously completed in focus areas, Tier 1 and Tier 2 data and/or higher resolution data are used to characterize conditions.
3	ANALYZE RISK AND VULNERABILITY	Tier 1 risk assessment provides a consistent analysis of potential coastal risk from storm surge inundation and sea level rise.	• State and territory appendices provide additional detail on risk and hazards • Tier 2 Economic Risk Assessment • Priority Environmental Area Identification	Tier 1 and Tier 2 and/or higher-resolution data are used to define areas and drivers of high risk.
4	IDENTIFY POSSIBLE SOLUTIONS	• Measures & Cost Library includes structural, non-structural, and natural and nature-based features. • Coastal Program Guide identifies programs and resources available to stakeholders.	Broad application of the: • Measures & Cost Library • RSM Optimization • SAND Report • Project Performance Evaluation • Coastal Program Guide	Location-specific application of the: • Measures & Cost Library • RSM Optimization • SAND Report
5	EVALUATE AND COMPARE SOLUTIONS	Measures & Cost Library provides planning level costs of measures to reduce risk.	State and territory appendices identify opportunities to address high-risk areas.	Stakeholder collaboration on a strategy composed of actions to reduce risk. • Measures & Cost Library • Tier 2 Economic Risk Assessment
6	SELECT PLAN	TIER 3		Coordinated strategy is produced to identify stakeholder/agency responsibilities for further action.
7	DEVELOP IMPLEMENTATION PLAN			
8	EXECUTE PLAN			
9	MONITOR AND ADAPT			

STEPS COMPLETED AT A CONCEPTUAL LEVEL BY THE SACS

ADDITIONAL STEPS TO BE COMPLETED IN FUTURE REPLICATIONS OF THE FRAMEWORK AT REFINED SCALES

Applying the Framework: Geographic Scales



Full Study Area = Tier 1

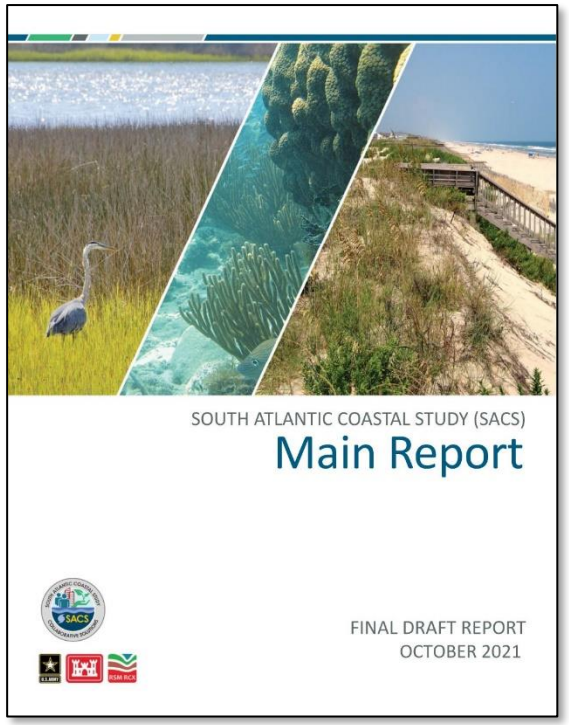
Individual State/Territory = Tier 2

Focus Areas = Refined Tier 2

Overview of Reports

SACS Reports and Products

South Atlantic Coastal Study Main Report



Appendices

- Engineering Appendix
- Geospatial Appendix
- Outreach Appendix
- Alabama Appendix
- Florida Appendix
- Georgia Appendix
- Mississippi Appendix
- North Carolina Appendix
- Puerto Rico Appendix
- South Carolina Appendix
- U.S. Virgin Islands Appendix

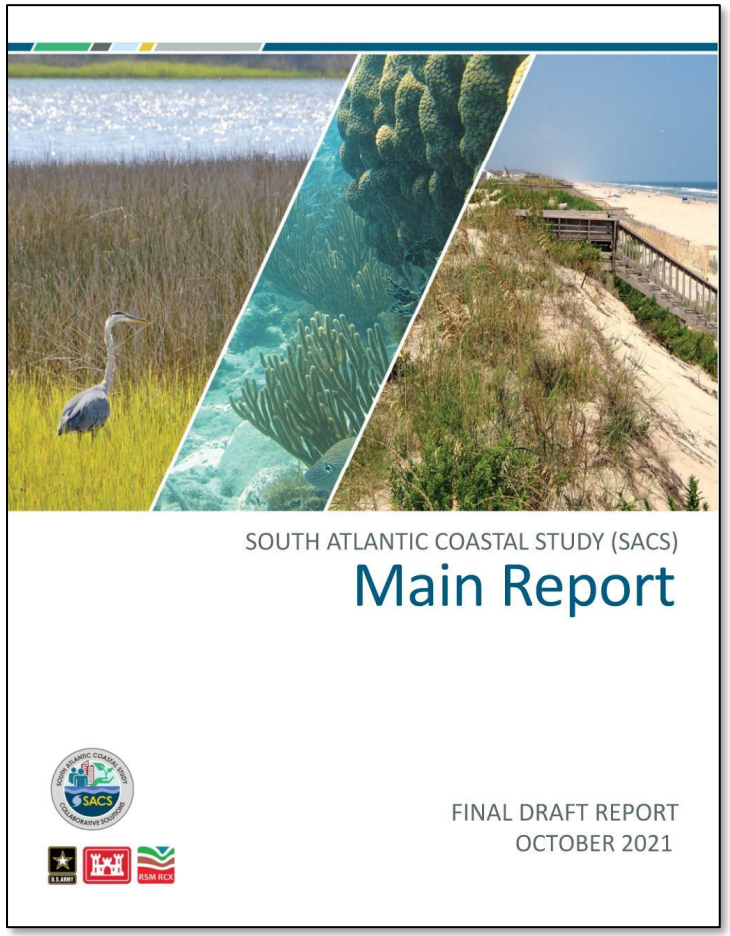
Focus Area Action Strategies

- AL: Western Mobile Bay and Tensaw River Delta
- GA: Chatham County
- GA: Glynn County
- FL: Northeast Florida
- FL: East Central Florida
- FL: Southeast Florida
- FL : Southwest Florida
- FL: Tampa Bay Region
- FL: Panama City, Panama City Beach, Mexico Beach, and Tyndall Air Force Base
- FL: Pensacola, Fort Walton Beach, and Destin
- MS: Greater Pascagoula
- MS: Biloxi-Gulfport
- NC: Dare County and Ocracoke
- NC: Carteret and Craven Counties
- NC: New Hanover and Brunswick Counties
- PR: Cabo Rojo
- PR: Isabela to Rincón
- SC: Grand Strand
- SC: Charleston Metro
- USVI: Christiansted
- USVI: Charlotte Amalie

Supporting Documents

- SACS Geoportal
- Measures and Costs Library Report
- Institutional and Other Barriers Report
- Coastal Program Guide
- 2020 Regional Sediment Management Optimization Update
- Planning Aid Report
- Sand Availability and Needs Determination (SAND) Report
- Environmental Technical Report
- Tier 2 Economic Risk Assessment Report

Main Report Organization



Executive Summary

Section 1 – Study Overview

Section 2 – Stakeholder Engagement

Section 3 – Findings

Section 4 – Applying the Framework: Tier1

Section 5 – Applying the Framework: Tier 2

Section 6 – Institutional and Other Barriers

Section 7 – Recommendations

Section 3 - Regional Findings

1. Significant coastal storm risk and consequential flooding exists throughout the study area and will dramatically increase as sea level rises and critical thresholds are surpassed.
2. Significant risk exists where development practices have created areas of dense infrastructure with limited or nonexistent adaptive capacity to contend with changing conditions.
3. Existing CSRM actions that are deemed effective should be maintained and modified in relation to changing conditions and should serve as examples for needed actions.
4. Regional sediment management (RSM) and beneficial use of dredged material strategies support economically sustainable and environmentally acceptable solutions to reduce coastal risk and must continue to be advanced throughout the region.
5. Joint responsibility is critical to risk management, as the footprint and complexity of coastal risk is continuing to increase. Because all stakeholders play a part in managing risk, collaborative planning among local, state, tribal, and federal entities, NGOs, academia, business, and industry must improve and burgeon actions to reduce risk.
6. Shared tools and information will assist in assessing, communicating, and addressing risk.
7. Natural and Nature-Based Features (NNBFs) are viable options for reducing coastal risk and providing co-benefits.
8. Where avoidance of risk is not possible, communities should adopt combinations of solutions, including nonstructural, structural, NNBF, and programmatic measures to manage risk.
9. RSM can supply sediment sources applicable for risk management efforts that provide monetary and nonmonetary benefits.

Regional Strategy

- The SACS **shared vision** led to development of **goals** and **objectives**.
- SACS **key products** were developed to support goals and objectives.
- The **regional strategy** is composed of ongoing, planned, and needed actions by all stakeholders (shared responsibility).
- **Recommendations** are made to advance actions considered most effective at managing risk.
  - Organized per category and implementation timing
  - Regional priority recommendation selected per category

"Coastal storm risk management is a shared responsibility, and we believe there should be shared tools used by all decision makers to assess risk and identify solutions."

Commanding Officer (2015)
U.S. Army Corps of Engineers
North Atlantic Division

Recommendation Organization

CATEGORIES FROM SACS AUTHORITY

- Activities and Areas Warranting Further Analysis 
- Address Barriers Preventing Comprehensive Risk Management 
- Design and Construction Efforts 
- Recommendations on Previously Authorized USACE Construction Projects 
- Regional Sediment Management Practices 
- Study Efforts 

IMPLEMENTATION TIMING

Timing for implementation is influenced by stakeholder collaboration needed, technical complexity, stakeholder interest, and other factors.

Near-term (< 5 years):

- Less complex
- Significant stakeholder momentum toward implementation, short implementation timeframe
- Maintain and adapt what works, implement ongoing/planned efforts

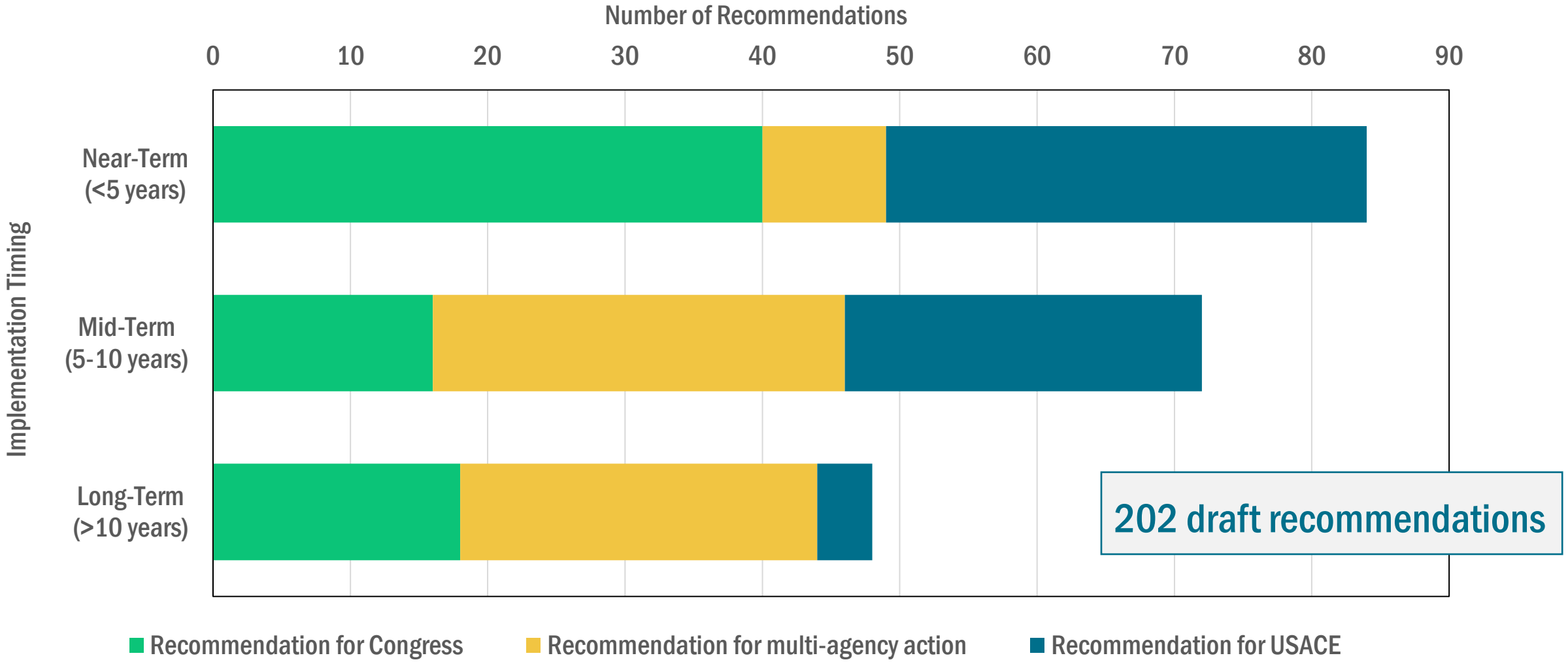
Mid-term (5-10 years) :

- Increased complexity
- Advance and implement emerging efforts

Long-term (> 10 years):

- More complex recommendations requiring significant stakeholder coordination before implementation
- Example: Large scale implementation of changes to land-use, zoning, or building codes

Recommendations for Congress, Multi-Agency Action, and USACE



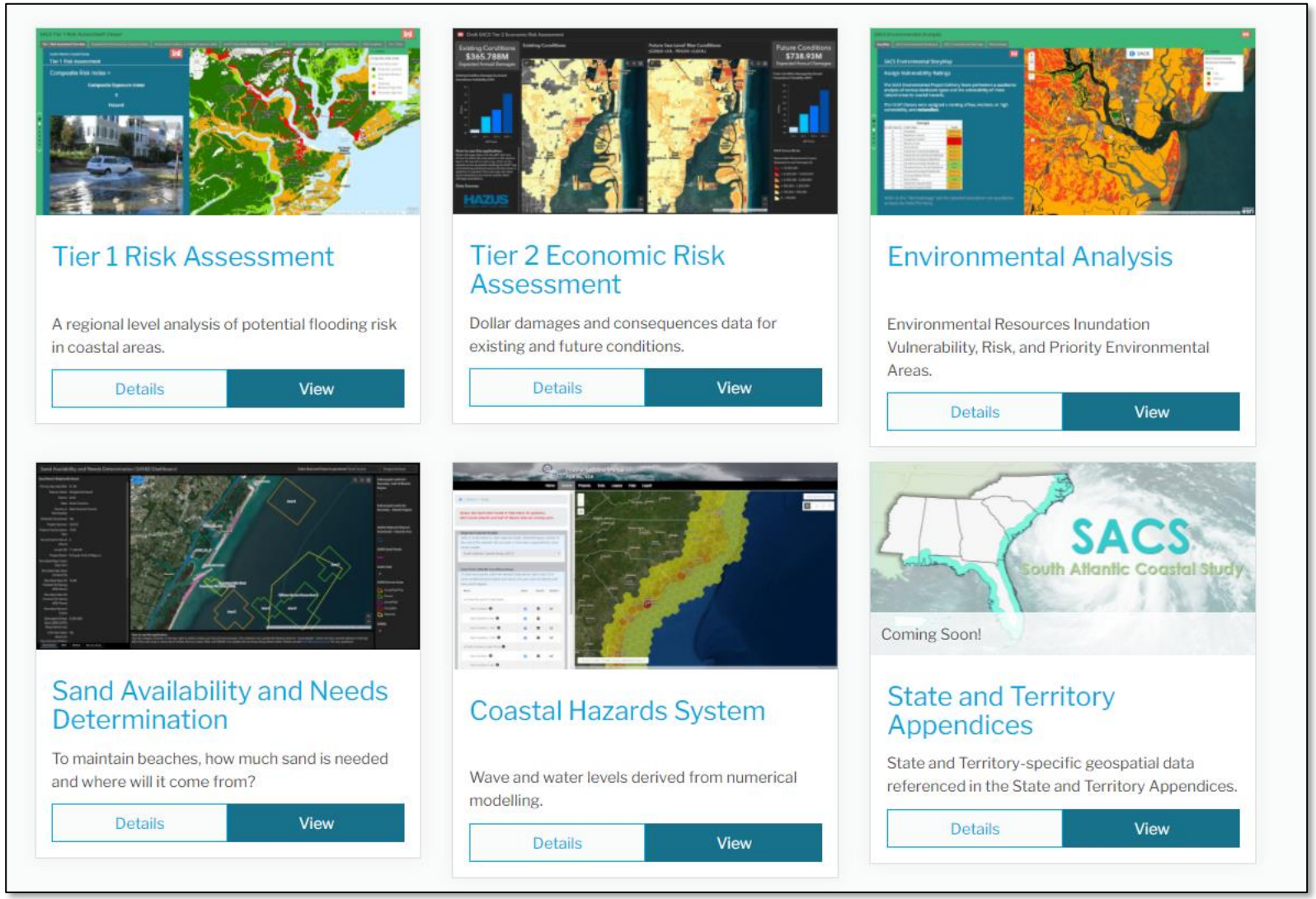
Recommendation Summary Spreadsheet

- Recommendation summary spreadsheet available to download from SACS website
- Able to sort and filter by available categories

Rec ID	Authority Category	Recommendation for	Implementation Timing	State/ Territory	Regional Priority	Recommendation	Description	Next Step to Implementation
1	Activities and Areas Warranting Further Analysis	Recommendation for USACE	Near-Term (<5 years)	All	Regional Priority	Acknowledge and consider environmental benefits as a factor in deciding on a recommended plan in all future CSRM studies that include beach nourishment. Use methods that account for environmental benefits in traditional habitat units and economic quantities (monetized).	Given the significant environmental benefits incidentally provided by many beach nourishment projects, and in accordance with the Assistant Secretary of the Army (Civil Works) policy directive, "Comprehensive Documentation of Benefits in Decision Document," efforts to fully acknowledge and consider environmental benefits as a factor in deciding on a recommended plan should be made in all future CSRM studies that include beach nourishment. Future work should also include methods to account for environmental benefits, not only in traditional habitat units, but also in economic quantities.	guidance/policy
2	Activities and Areas Warranting Further Analysis	Recommendation for USACE	Near-Term (<5 years)	All	Regional Priority	SACS key products should be maintained and updated by USACE and utilized, as applicable, by USACE and stakeholders to support consistent, efficient, and effective analyses.	SACS products can assist project delivery teams more efficiently carry out study efforts by providing a common set of tools and products. Products also provide users and reviewers with a common baseline/understanding to support more efficient and effective analyses and reviews. SACS key products and associated training on their use should be provided within USACE and to interested stakeholders throughout the study area, ideally in joint training with other federal and state agencies incorporating additional tools and products.	funding
3	Activities and Areas Warranting Further Analysis	Recommendation for multi-agency action	Mid-Term (5-10 years)	All	Regional Priority	Advance ongoing interagency work to improve understanding and application of compound flooding effects on existing and future coastal storm risk.	Separate from the SACS, the U.S. Congress has directed the USACE ERDC to collaborate with academia to conduct research into compound flooding. In addition, USACE is partnering with other federal agencies (e.g., NOAA, FEMA, U.S. Geological Survey [USGS]) and other non-governmental agencies. Significant work is required to establish a cohesive framework to proactively manage the risk presented by compound flooding events. At maturity, this framework should provide an encompassing approach to all aspects of compound flooding effects in coastal regions subject to both coastal and pluvial/fluvial flood-risk drivers, updating/developing technical guidance, advancing long-term monitoring of data collection, enhanced numerical modeling, and establishing a robust statistical approach to the coincidence of events that contribute to compound flooding.	stakeholder collaboration

SACS Geoportal

- Provides access to study datasets, products and documentation
- Zoom into datasets of interest
- Download datasets for individual use

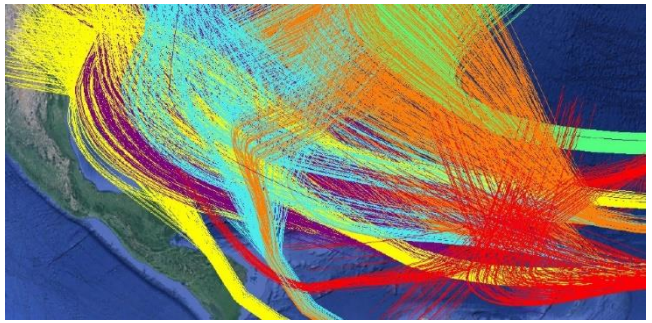


SACS Geoportal
https://data-sacs.opendata.arcgis.com/

Other Appendices

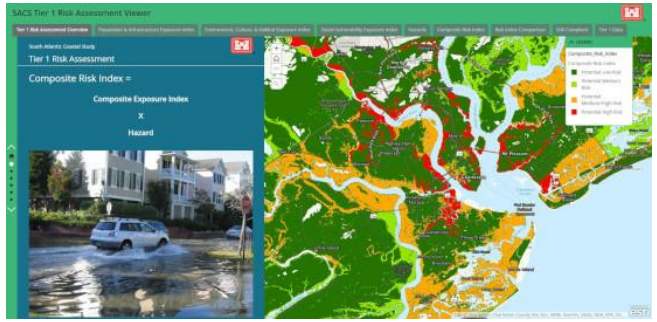
ENGINEERING

- Details risk associated with coastal hazards such as storm surge, wave attack, and erosion under current and future conditions
- Discusses engineering components of the coastal hazards system and sea level change analysis



GEOSPATIAL

- Details the Tier 1 Risk Assessment
- Discusses the geospatial datasets generated to better understand coastal risk, environmental risk, economic damages, and risk reduction efforts across the study area



OUTREACH

- Describes the Engagement and Communications Plan which is the framework used for planning and executing communications associated with the SACS
- Details agency collaboration, stakeholder engagement, and communication methods and tools

Questions

Meeting Purpose

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2. Present DRAFT SACS findings and recommendations for South Carolina
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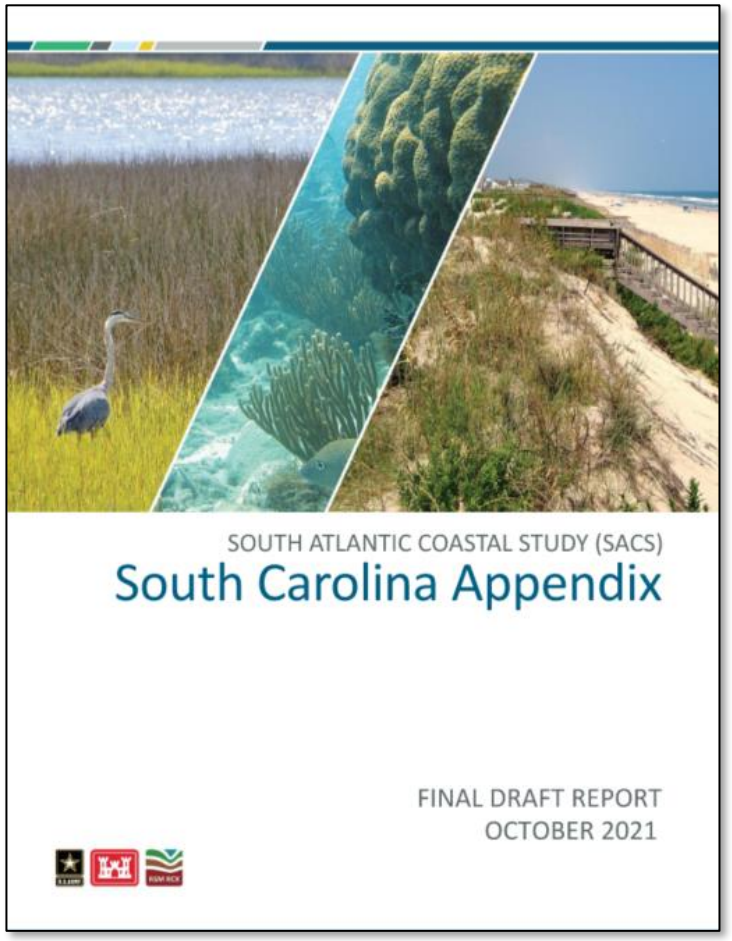
South Carolina Appendix Organization



Section 1 – Introduction

Section 2 – Agency Coordination and Collaboration

Section 3 – Overview of Existing and Future Conditions

Section 4 – Risk Assessment

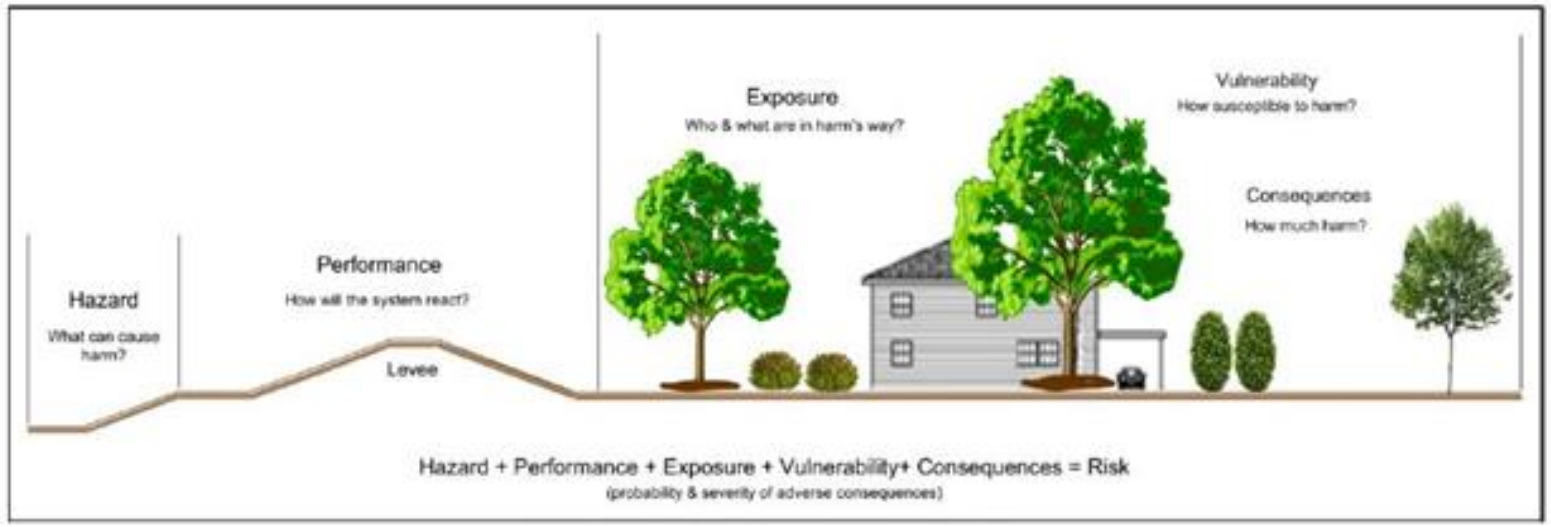
Section 5 – Managing Risk

Section 6 – Institutional and Other Barriers

Section 7 – Recommendations to Address Risk

Attachments – Focus Area Action Strategies

Section 4 - Risk



Definitions of risk components as utilized in the SACS include:

Hazard – In a general sense, hazard is anything that is a potential source of harm to a valued asset (human, animal, natural, economic, and social)

Exposure – Describes who and what may be harmed by the flood hazard. Exposure incorporates a description of where the flooding occurs at a given frequency, and what assets exist in that area.

Vulnerability – Susceptibility of harm to human beings, property, and the environment when exposed to a hazard. Depth-damage functions, depth-mortality functions, and other similar relationships can be used to describe vulnerability.

Risk – Combination of likelihood and harm to people, property, infrastructure, and other assets.

Section 4 - Storm Surge and Inundation Hazard

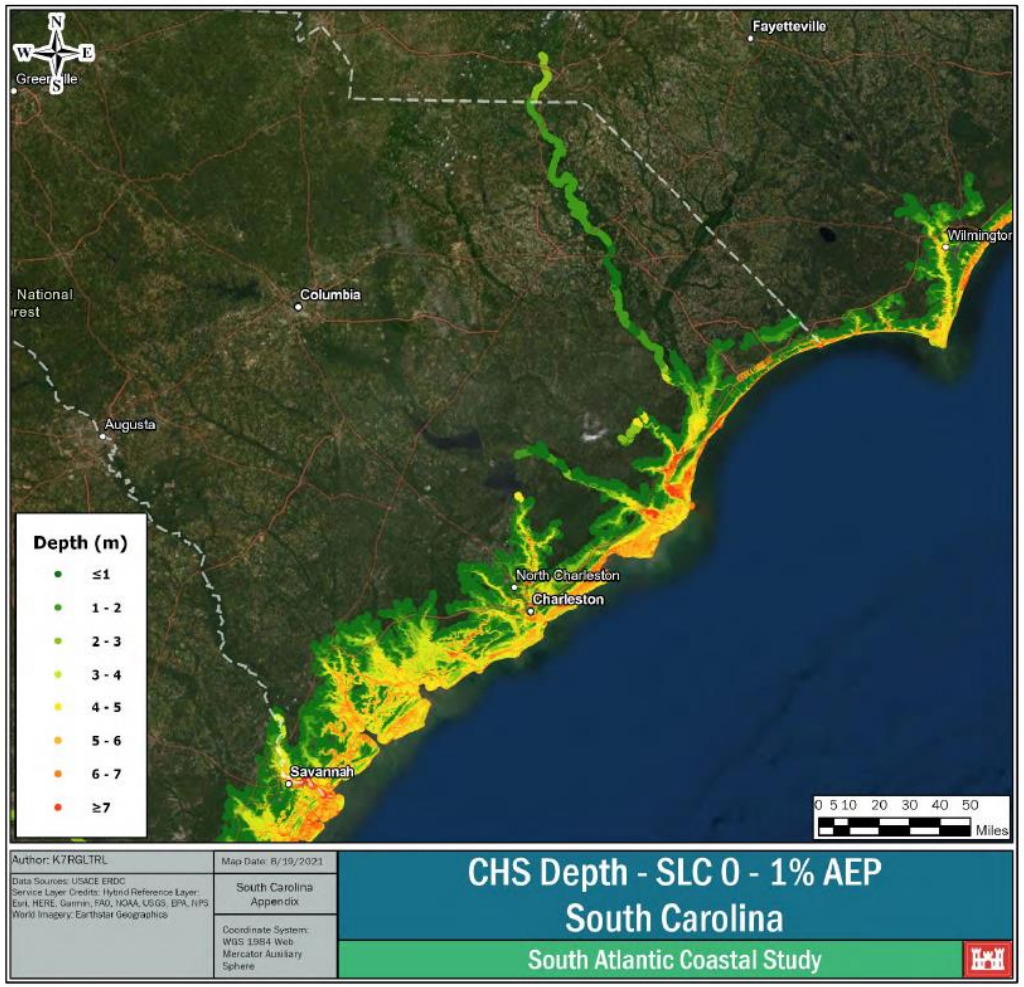


Figure 4-5: CHS Modeled Inundation Depth for the 1-Percent Annual Exceedance Probability Event in South Carolina (USACE 2020a)

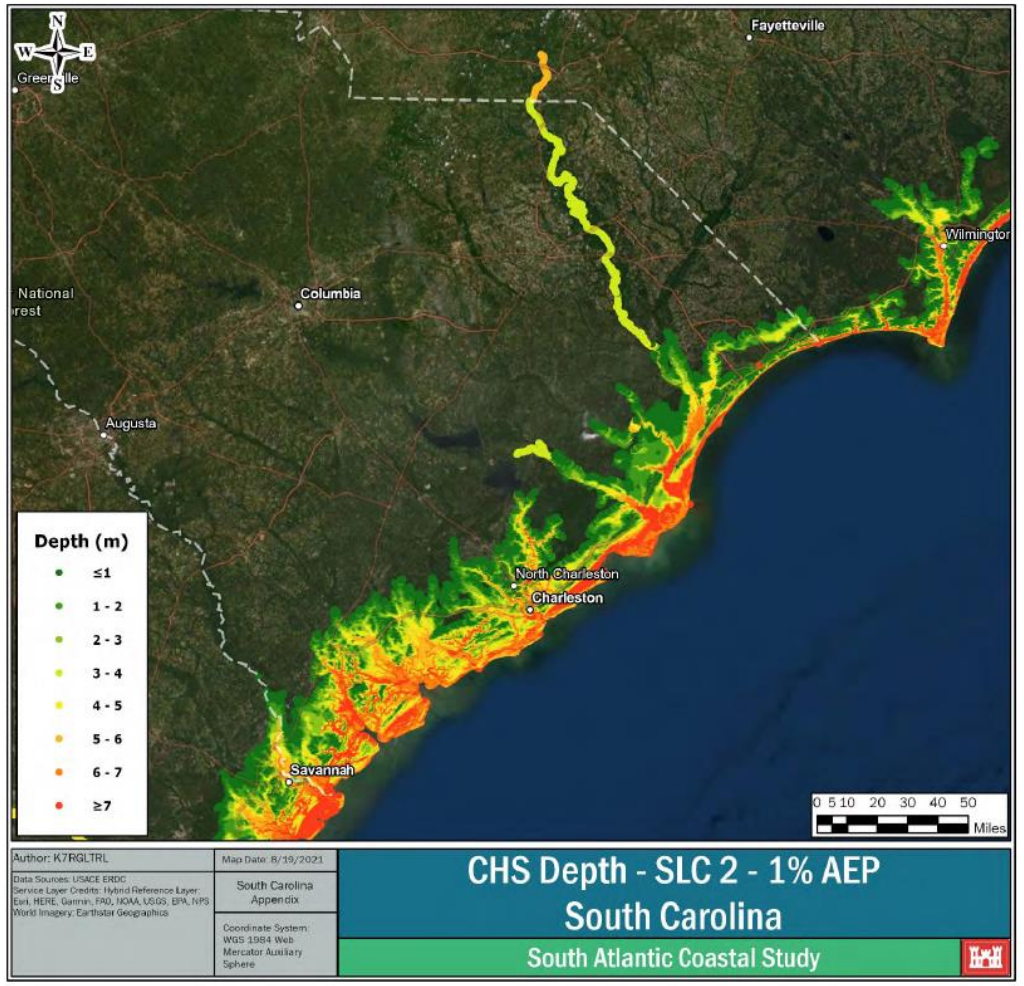
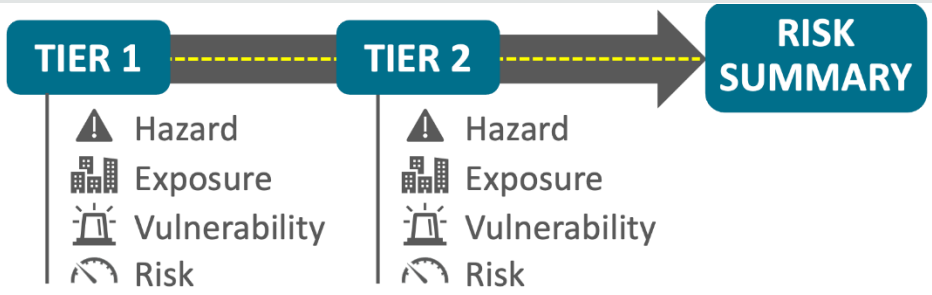
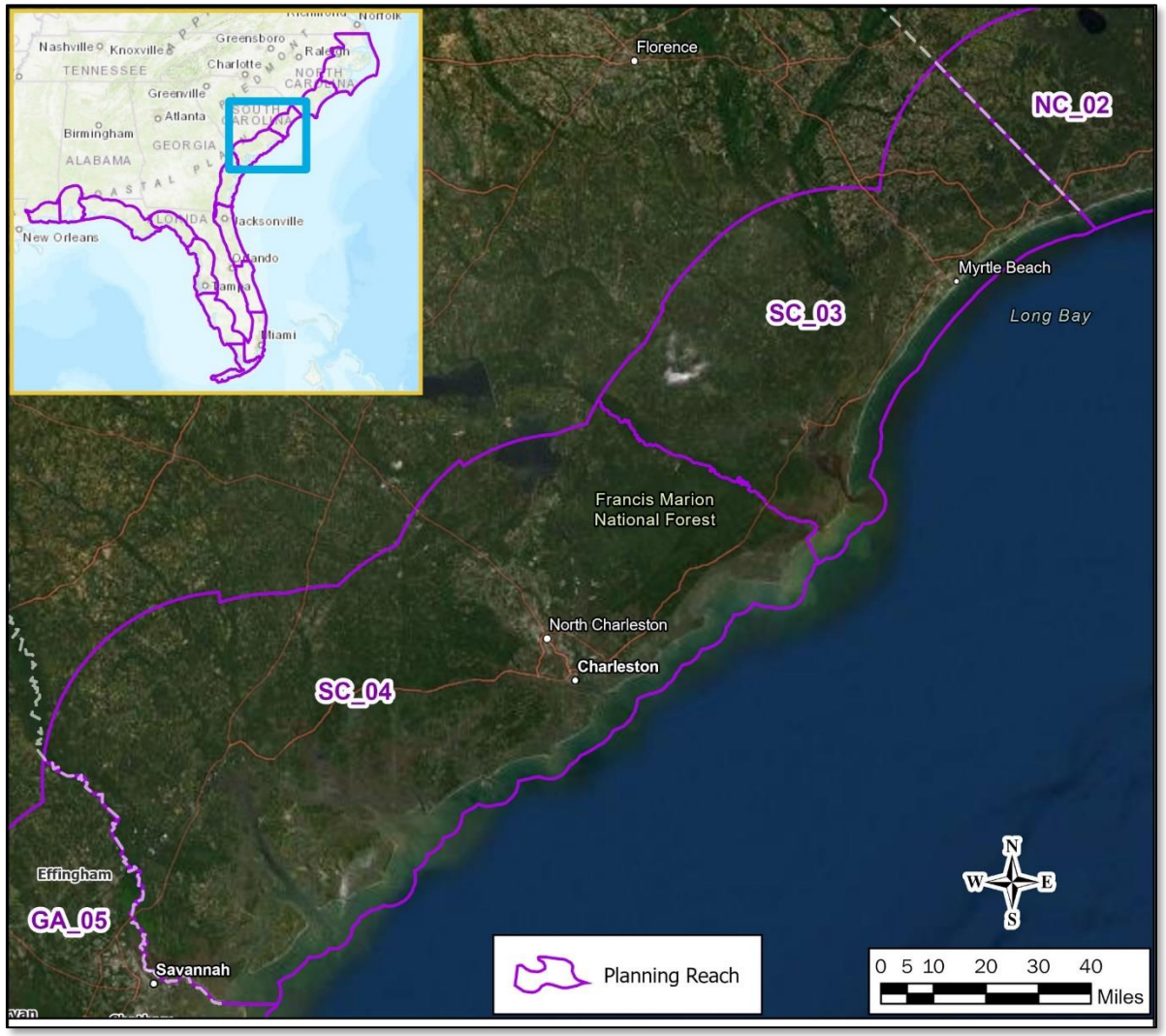


Figure 4-7: CHS Modeled Inundation Depth for the 1-Percent Annual Exceedance Probability Event with 7.35 feet of Sea Level Rise in South Carolina (USACE 2020a)

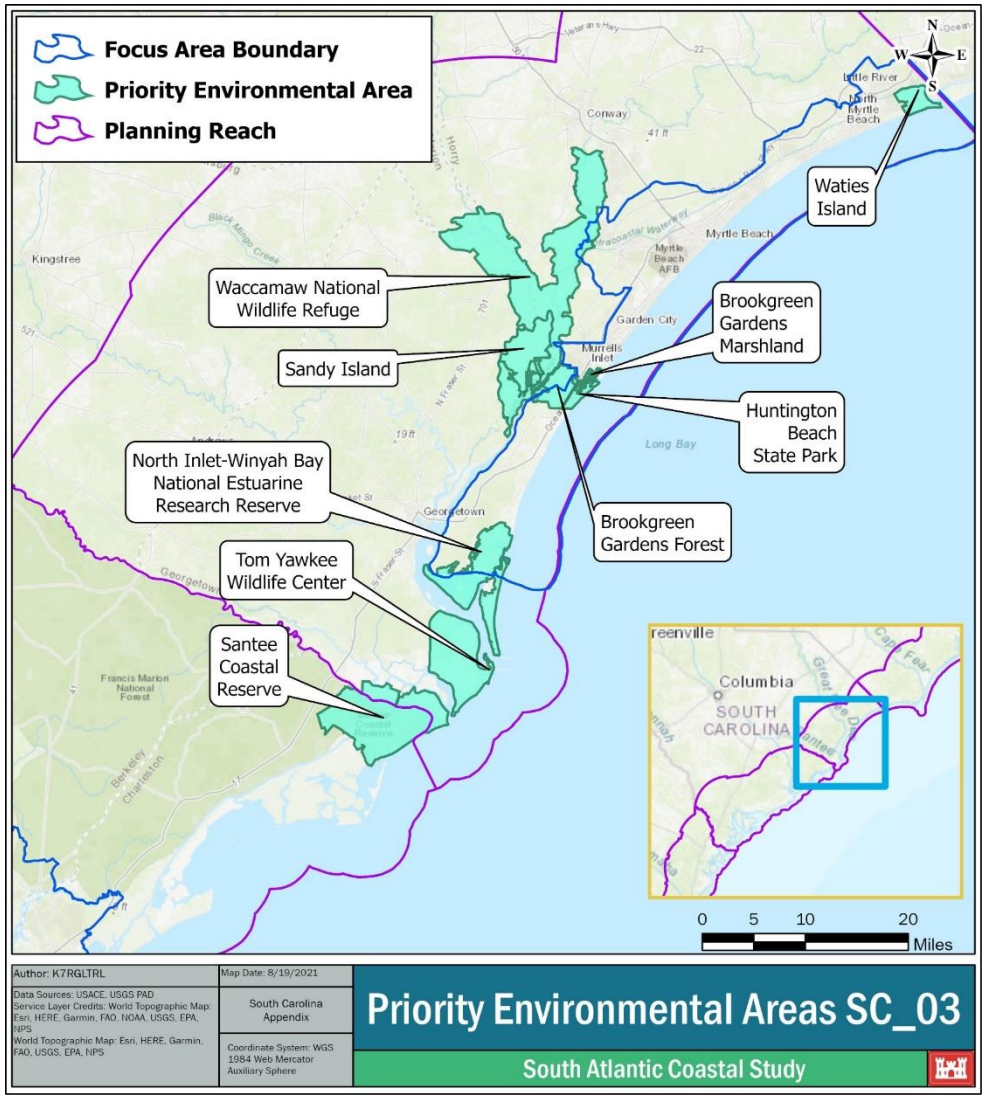
Section 4 - Risk Assessment

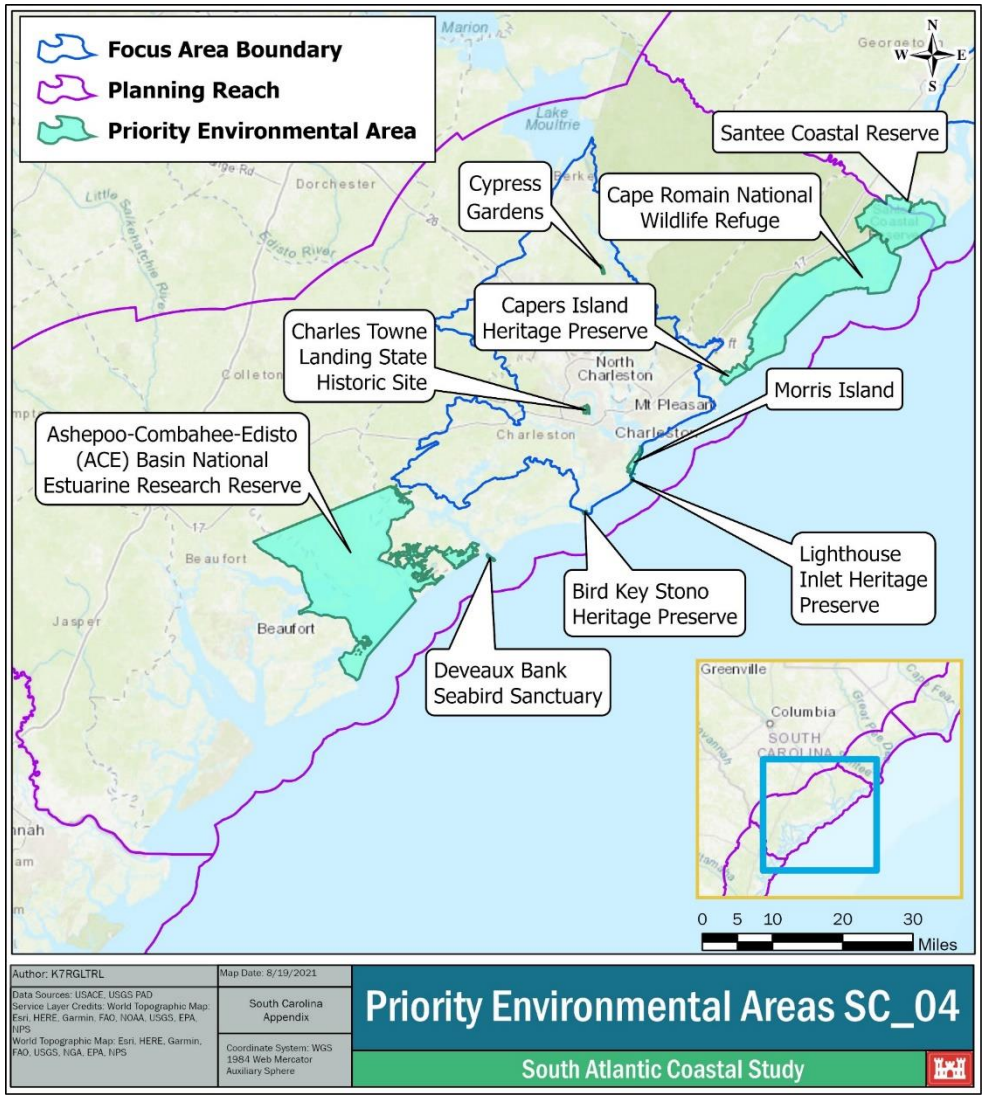


- Analysis performed per planning reach
  - **Tier 1:** summary of findings from the consistent assessment across study area
  - **Tier 2:** more refined state-specific assessment
    - Economic risk
    - Risk to environmental resources
    - Risk to cultural resources



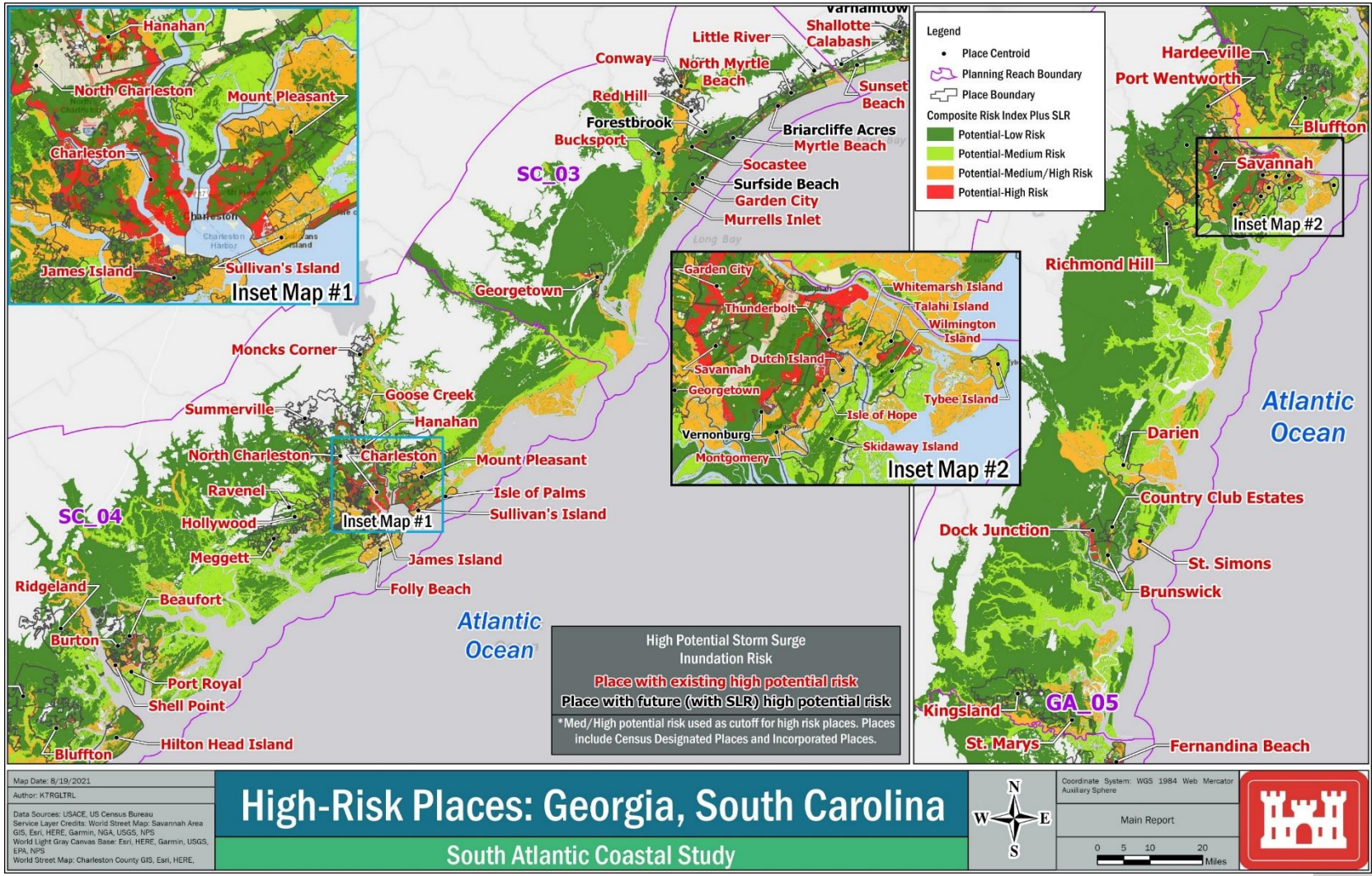
South Carolina Priority Environmental Areas





South Carolina High-Risk Places and Economic Damage Exposure

- Over 80 High-Risk Places
- $882M in estimated annual damages in the existing condition
- $2B in the future condition with sea level rise



SC03 Places/Areas with High-Risk

Georgetown County

- *Murrells Inlet*
- *Pawleys Island*
- *Georgetown*
- *Andrews*
- *Litchfield, Pawleys, and Debordieu*
- *North Georgetown*
- *South Garden City*
- *North, South, and Cat Islands*
- *Sandy Island*

Horry County

- *North Myrtle Beach*
- *Garden City*
- *Socastee*
- *Little River*
- *Surfside Beach*
- *Myrtle Beach*
- *Forestbrook*
- *Briarcliffe Acres*
- *Bucksport*
- *Conway*
- *Red Hill*
- *Arcadian Shores*
- *North Surfside Beach*
- *Waties Island*

SC04 Places/Areas with High-Risk

Beaufort County

- *Port Royal*
- *Beaufort*
- *Shell Point*
- *Burton*
- *Bluffton*
- *Yemassee*
- *North Beaufort*
- *East Beaufort and St. Helena*
- *Dataw Island*
- *Fripp Island*
- *North Bluffton*
- *East Bluffton*
- *Daufuskie Island*
- *Hunting Island*
- *Little Capers Island*
- *Pritchards Island*
- *St. Phillips Island*
- *Harbor Island*
- *Dawys Island*

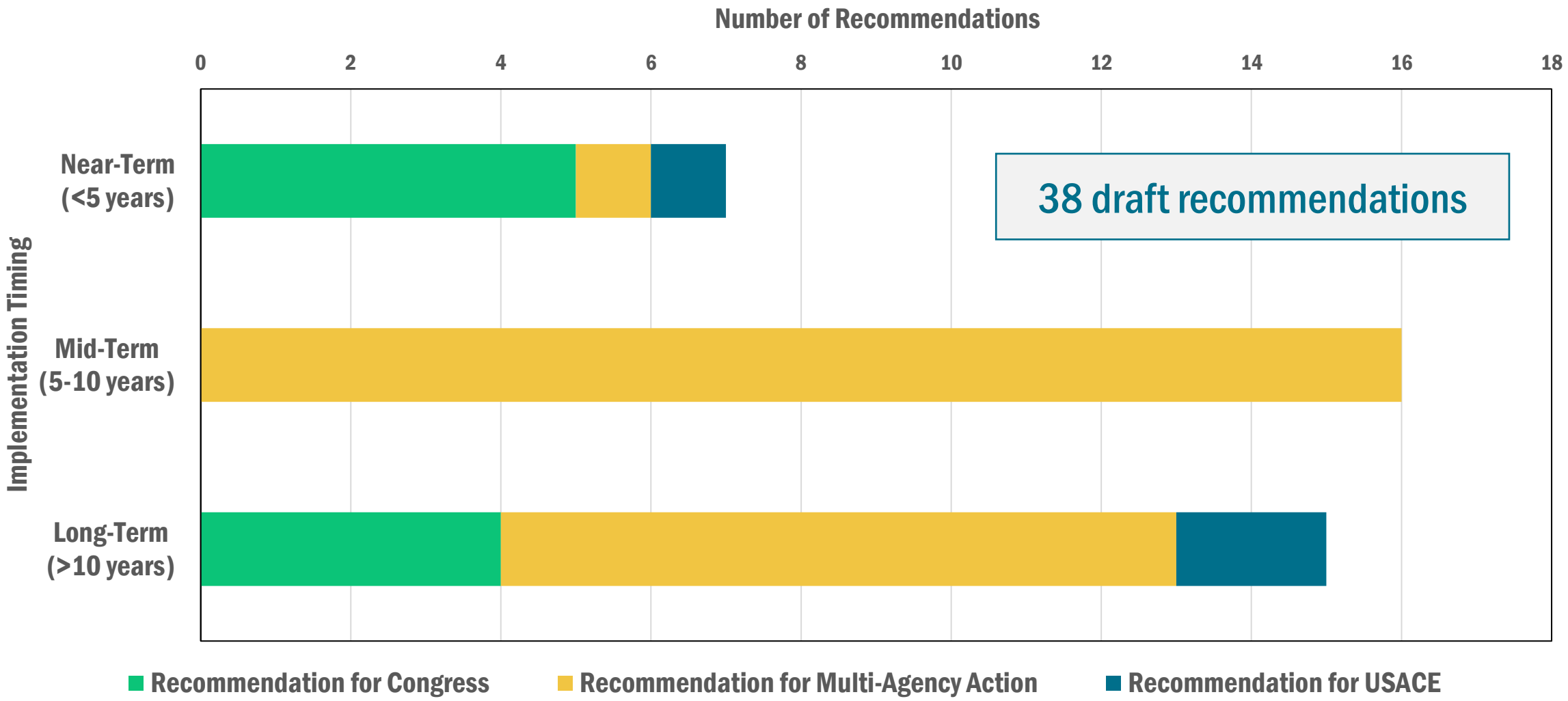
Berkeley County

- *Hanahan*
- *Goose Creek*
- *Moncks Corner*
- *North Daniel Island*
- *South Daniel Island*

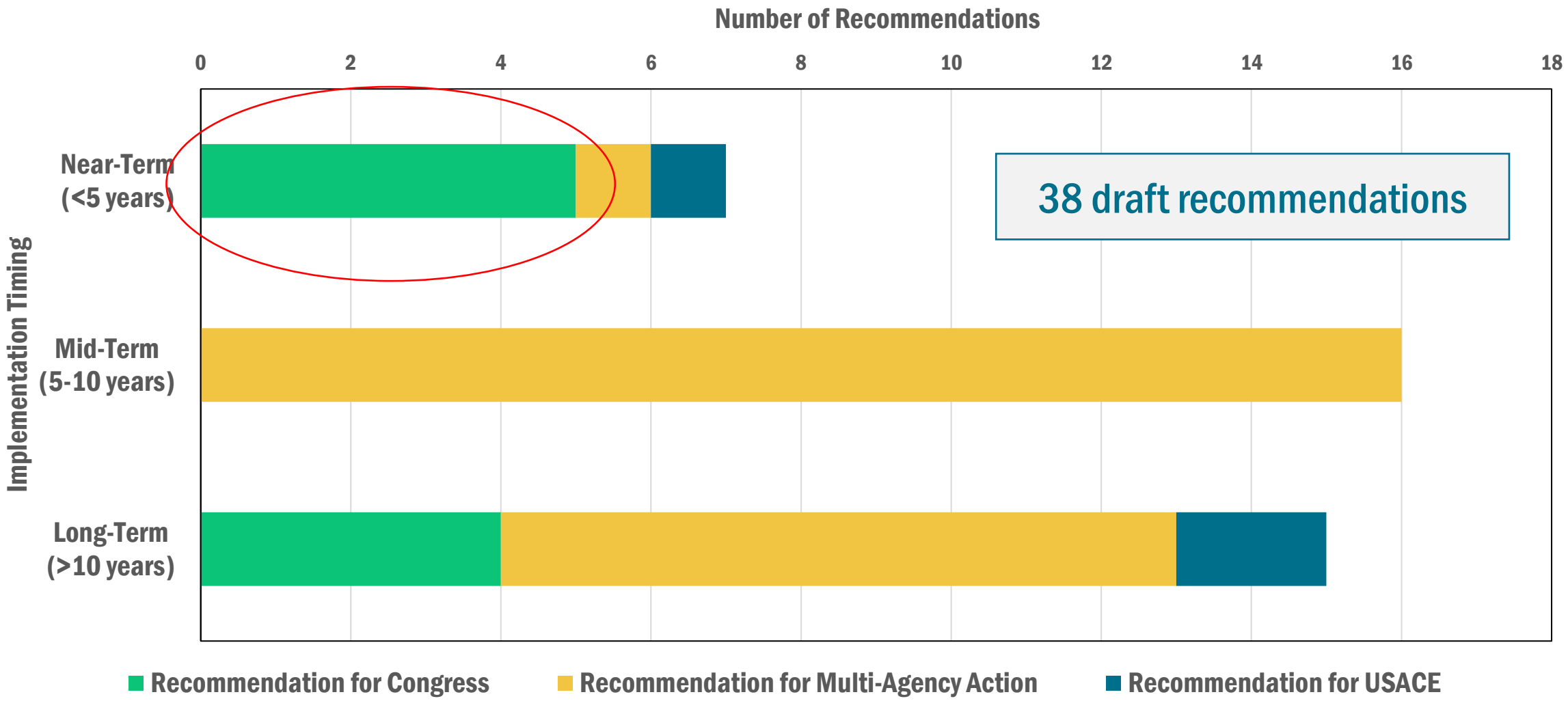
Charleston County

- *Mount Pleasant*
- *Charleston*
- *North Charleston*
- *Folly Beach*
- *Kiawah Island*
- *Seabrook Island*
- *Sullivan's Island*
- *Isle of Palms*
- *Hollywood*
- *Meggett*
- *McClellanville*
- *Awendaw*
- *Rockville*
- *Ravenel*
- *James Island*
- *Church Creek*
- *Bees Ferry and Rantowles*
- *North Johns Island*
- *South Johns Island*
- *West James Island*
- *Central James Island*
- *Edisto Island*
- *Dewees Island*
- *Edingsville Beach*
- *Morris Island*
- *Pockoy and Botany Bay Islands*

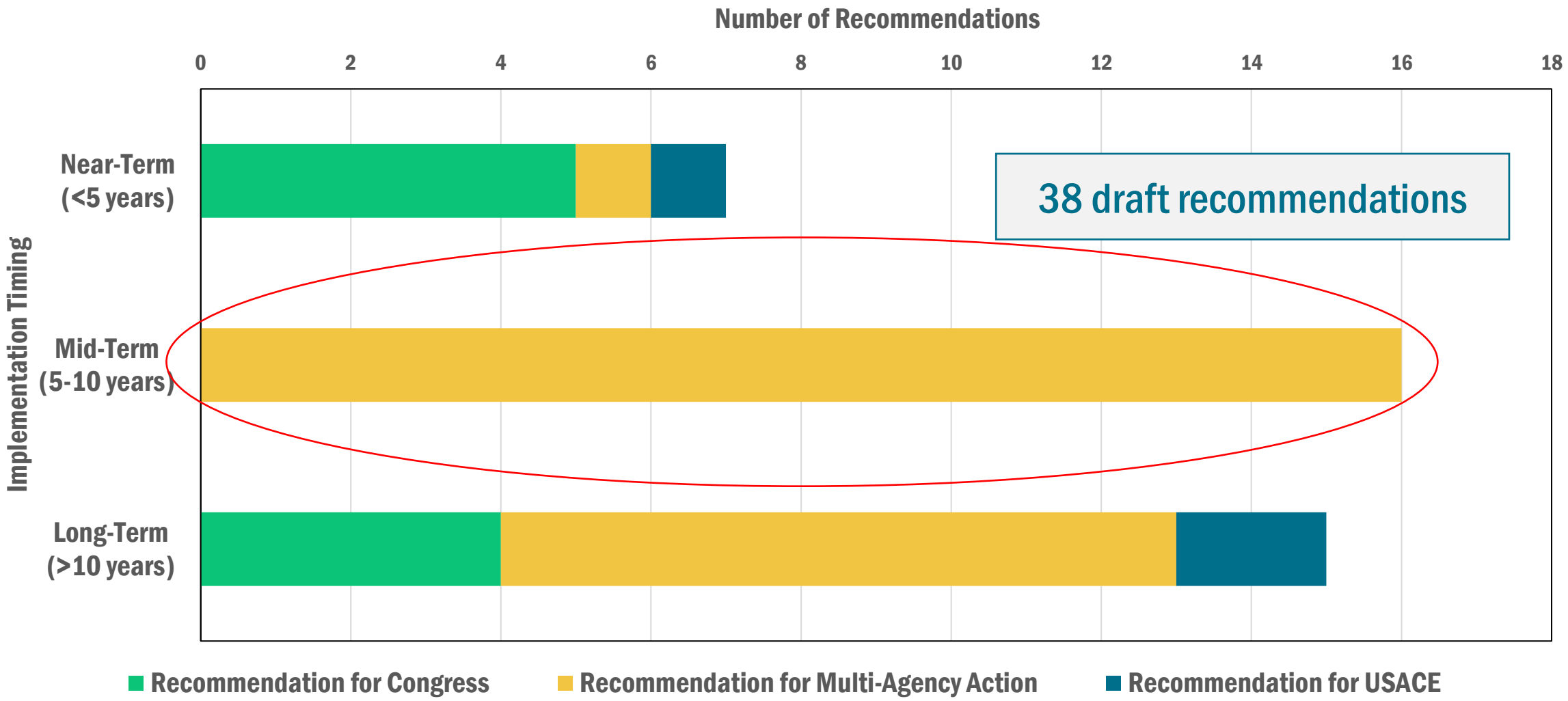
Section 7 - South Carolina Recommendations



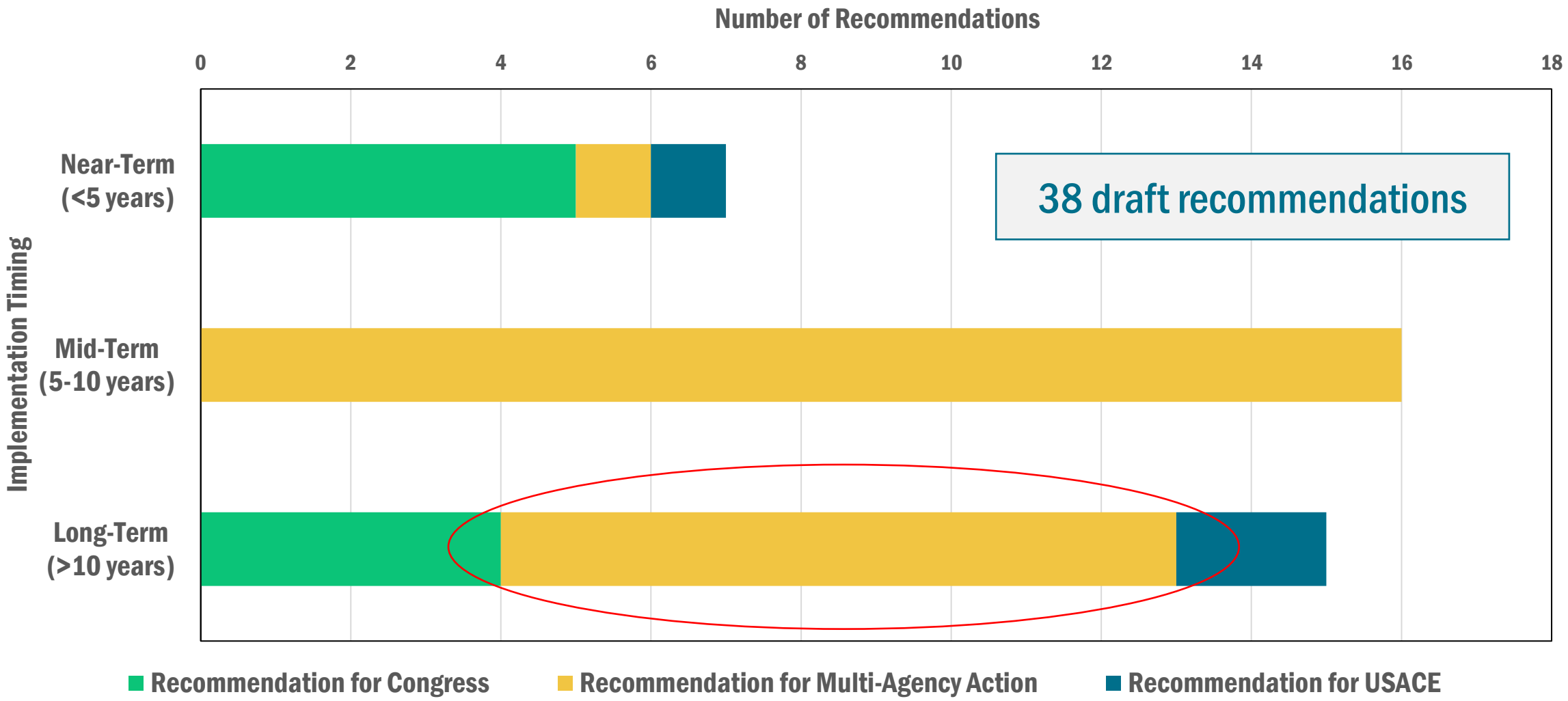
Section 7 – Example: Near-Term Recommendation for Congress



Section 7 – Example: Mid-Term Multi-Agency Recommendation



Section 7 – Example: Long-Term Multi-Agency Recommendation



South Carolina State Priority Recommendations

Authority Category	Implementation Timing	Recommendation For	Recommendation	Description
Design and Construction Efforts	Near-Term (<5 years)	Congress	Charleston Peninsula, South Carolina Coastal Flood Risk Management Feasibility Study Recommended Plan (pending)	The SACS support recommendations (pending) of the USACE Charleston Peninsula, South Carolina Coastal Flood Risk Management Feasibility Study. The study is addressing the risk of damages from storms on the Charleston Peninsula. As of August 2021, the proposed alternative includes a seawall, natural and nature-based features, and nonstructural floodproofing, with an estimated benefit to cost ratio of 10.2 to 1.
Recommendations on Previously Authorized USACE Construction Projects	Near-Term (<5 years)	Congress	Folly Beach Shore Protection Project, South Carolina	CSRM for Folly Beach - A 50-year extension to the authorization is proposed, and the current project is being restudied to determine ways to improve it from a holistic view of its performance. Findings as of June 2021 are that the Folly Beach Shore Protection Project can be improved by adding a dune feature to the beach placement template.
Study Efforts (follow-on USACE feasibility study)	Near-Term (<5 years)	Congress	Beaufort Peninsula Coastal Storm/Flood Risk Management Study	Study to address coastal flooding events. The ever-increasing occurrence, nature and severity of coastal flooding events has become severely problematic. The Beaufort peninsula is confined by three linked, but distinct, coastal waterways; the Beaufort River, Battery Creek, and Albergottie Creek. All the areas share low lying and bluffed topography. Study leading to an actionable plan to provide long-term solutions to public health, safety and quality of life is necessary. Authority: 1955 PL84-71. A Letter of Intent is on file.
Study Efforts (follow-on USACE feasibility study)	Near-Term (<5 years)	Congress	Charleston Inland and Tidal Study	The purpose of this effort is to reduce significant flood damages to properties, critical infrastructure, and transportation routes within the City of Charleston due to rainfall induced and tidal flooding, which represent a significant issue in the City of Charleston. Approximately 60 percent of the City of Charleston is within the FEMA 100-year floodplain. This is a different study area and flooding type than that covered by the Charleston Peninsula Study that is currently underway.
Study Efforts (follow-on USACE feasibility study)	Near-Term (<5 years)	Congress	Waccamaw River, Horry County, South Carolina (SC) – Flood Risk Management	Explore measures for flood risk management similar to the USACE federal watershed studies (Tar Pamlico and Neuse) being conducted in two watersheds to the north in North Carolina.

Meeting Purpose

1. Provide a brief overview of the South Atlantic Coastal Study (SACS) reports and products
2. Present DRAFT SACS findings and recommendations for South Carolina
3. Walk through report structure and organization to facilitate stakeholder review

SACS Focus Areas

"…a report recommending specific and detailed actions to address the risks and vulnerabilities…" -WRDA'16, Sec. 1204

Focus Areas:

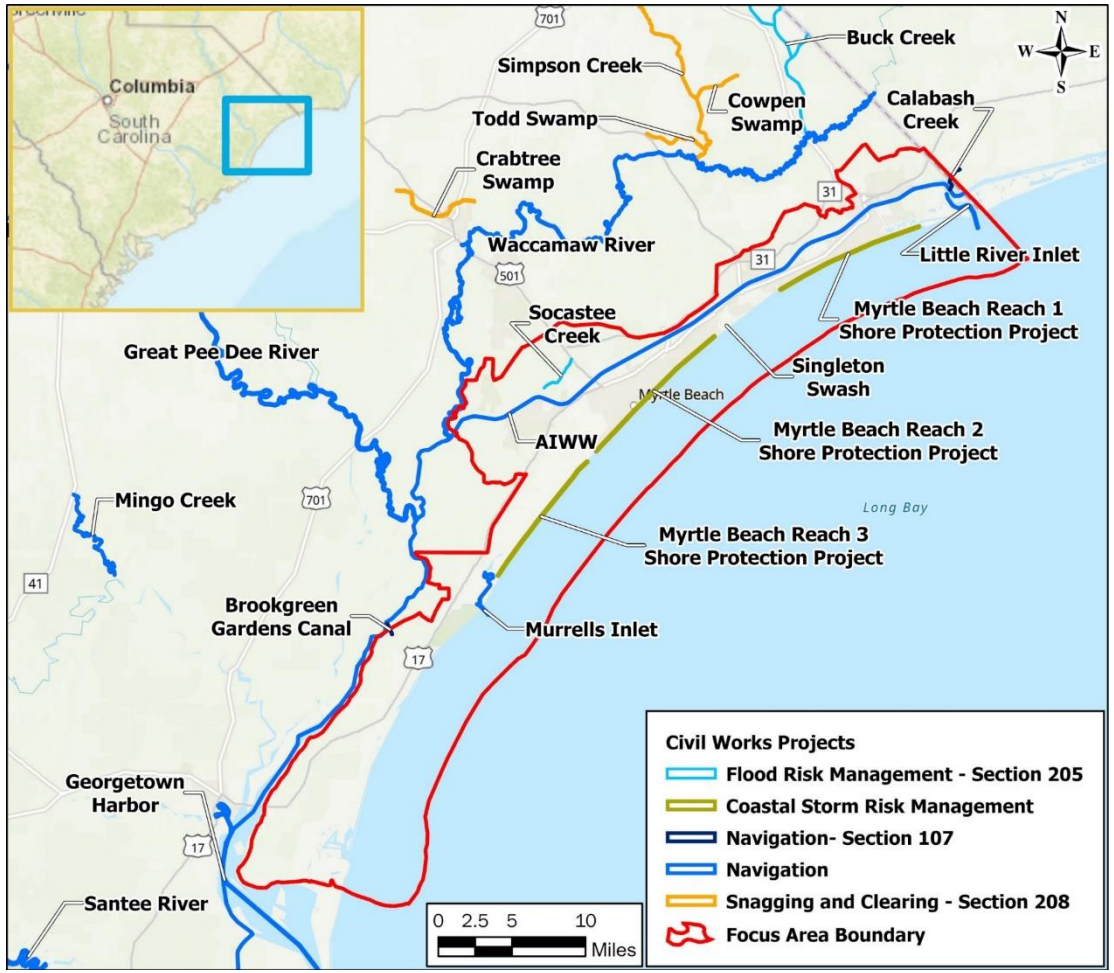
- Represent areas of highest risk
- Serve as examples of how Framework can be applied in other high-risk locations

- Twenty-one focus areas throughout the study area
- Minimum of one focus area in each state/territory

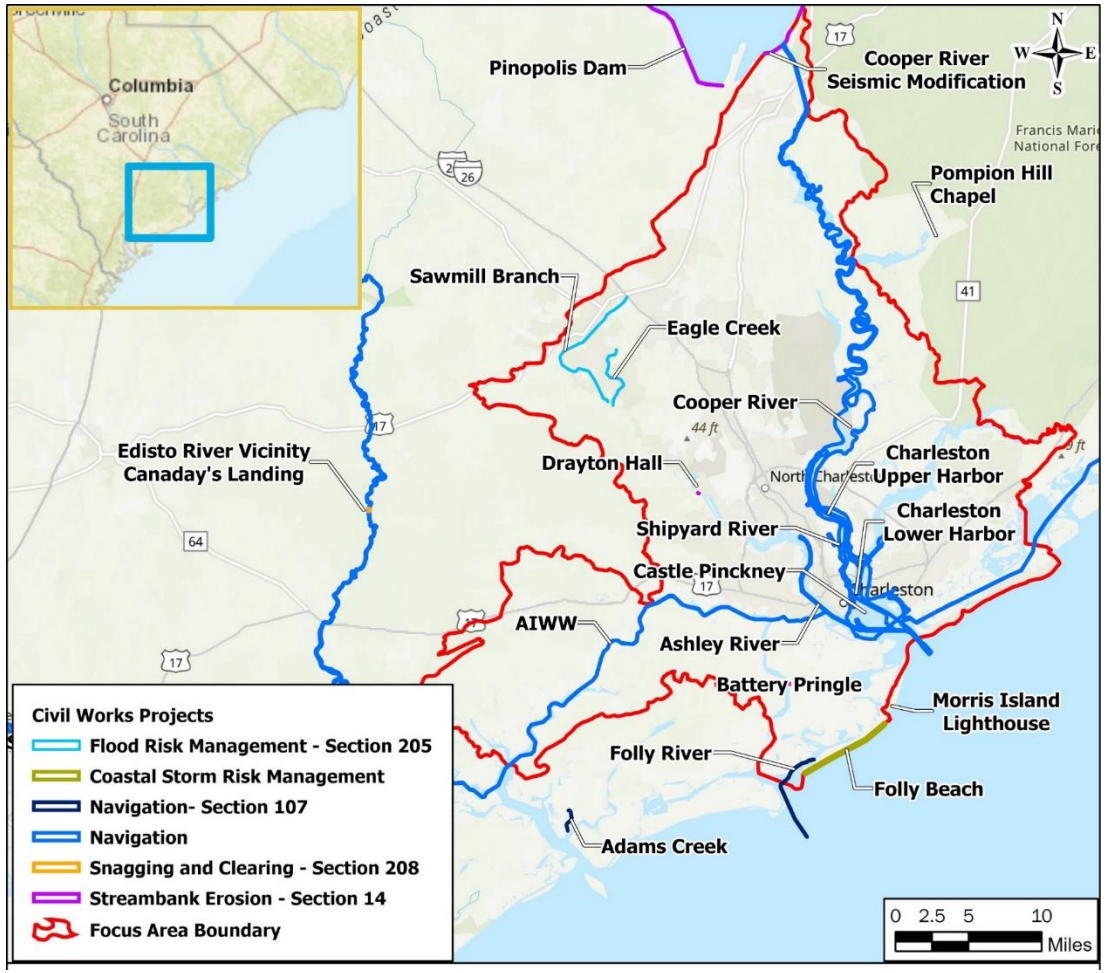
- Focus Area Action Strategies developed for each focus area using SACS key products and multiple agencies' tools

South Carolina Focus Areas

The Grand Strand



Charleston Metro



Virtual Poll – Are you located in a South Carolina focus area?

- Yes, Grand Strand
- Yes, Charleston Metro
- No, but I am curious about them
- No, and I am most interested in the state findings

Focus Area Action Strategy Organization

Section 1 – Introduction

Section 2 – Problems and Opportunities

Section 3 – Objectives and Constraints

Section 4 – Existing and Future Conditions

Section 5 – Action Strategy Development

Section 6 – Recommendations

Section 4 - Focus Area Economic Exposure, Grand Strand Example

1) Litchfield by the Sea, Pawleys Island, DeBordieu Beach, Georgetown;
2) Murrells Inlet, Garden City, Surfside Beach;
3) Myrtle Beach, Socastee;
4) North Myrtle Beach, Briarcliffe Acres, Little River;
5) Garden City, North Litchfield

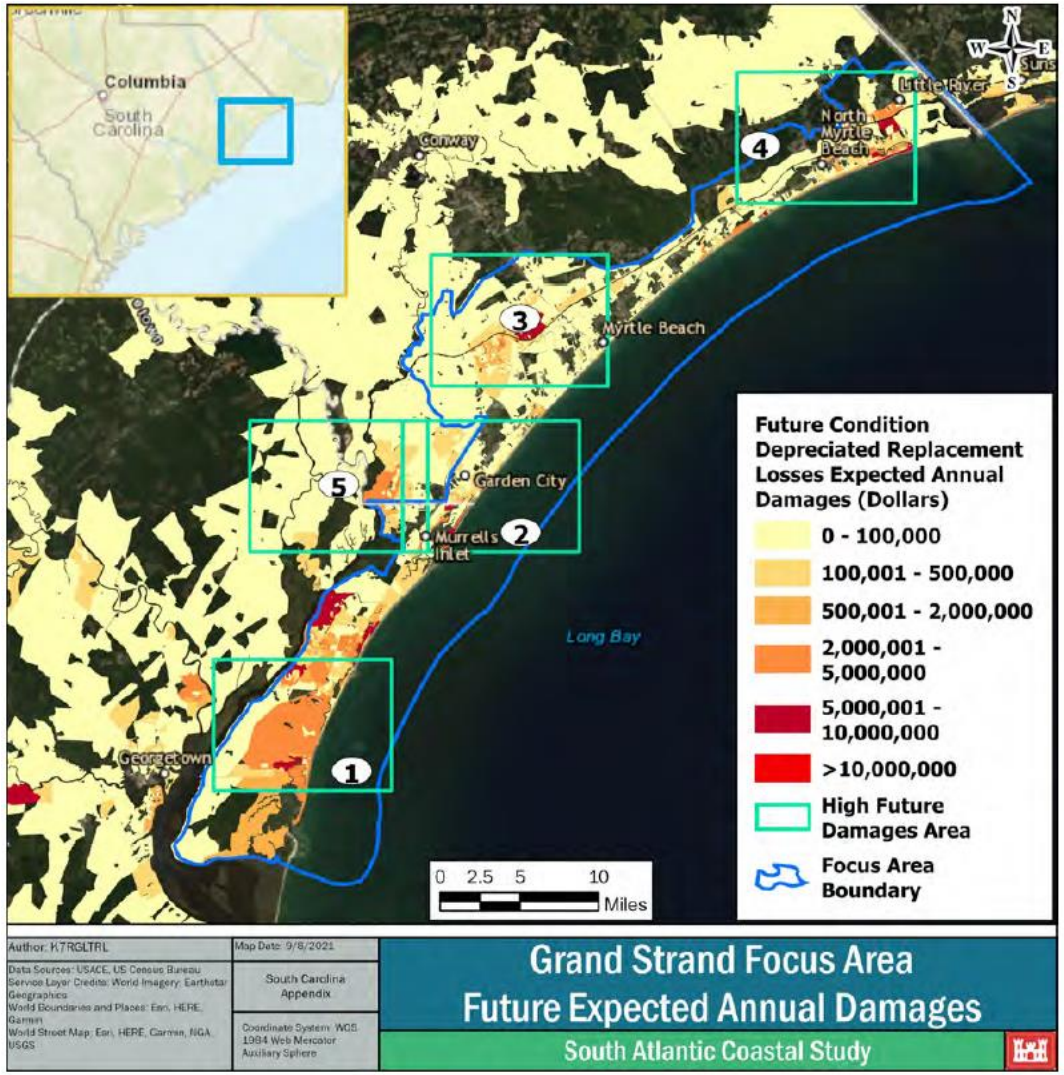
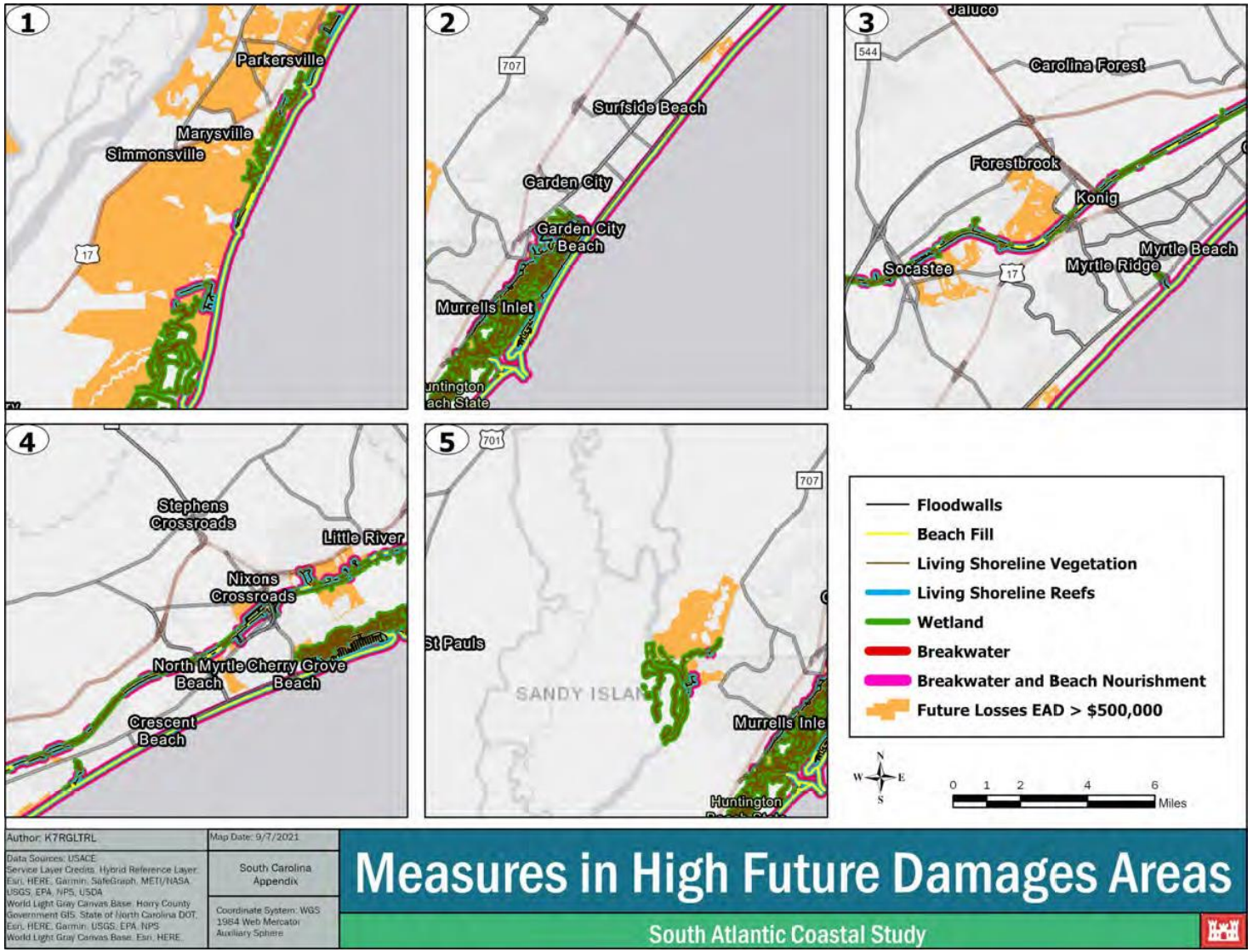


Figure 11: Future Expected Annual Damages Based on the Tier 2 Economic Risk Assessment

Section 5 – Focus Area Potential Measures, Grand Strand Example

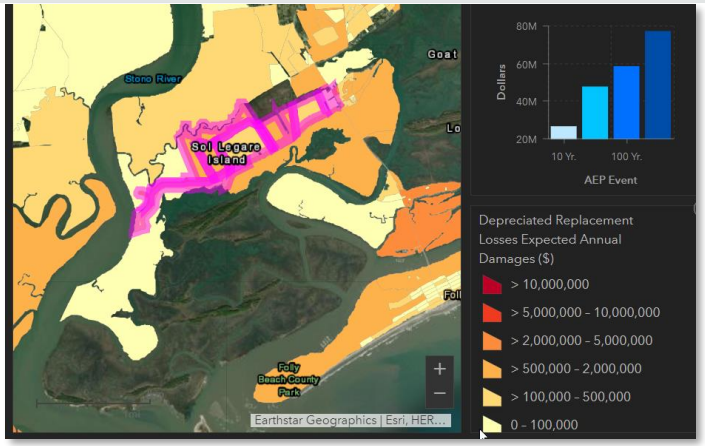
The measures are:

- Breakwater and beach nourishment (hot pink)
- Breakwaters (red)
- Wetlands (green)
- Living shoreline reefs (blue)
- Living shoreline vegetation (brown)
- Beach fill (yellow)
- Floodwalls (black)



Section 5 – Tier 3 Launch Example, Sol Legare, Charleston Metro

- $4M Economic Damages estimated for future
- The Measures and Costs Library (MCL) tool provides a rough-order-of-magnitude (ROM) cost estimate range
- The MCL tool in conjunction with the Economic Risk Assessment tool can help scope future efforts.



SACS Focus Area Action Strategy Measures			Measure Investment Cost (Rough-Order-of-Magnitude Total First Construction Cost)		Equivalent Annual Cost (Rough-Order-of-Magnitude)	
Measure Group Name	Measurement	Unit	Low	High	Low	High
Road Elevation	10,250	$/LF	$75.7M	$139.3M	$2.8M	$5.2M
Floodwalls	24,675	$/LF	$132.3M	$213.1M	$4.9M	$7.9M
Oyster Reef Breakwater	21,500	$/LF	$20.4M	$85.2M	$755K	$3.2M
Living Shoreline Sills	21,500	$/LF	$38M	$179.6M	$1.4M	$6.7M
Living Shoreline Vegetation	21,500	$/LF	$470K	$46.9M	$17K	$1.7M
Wetland Enhancement	531	$/AC	$102.8M	$662.5M	$3.8M	$24.5M
Levees / Dikes	22,350	$/LF	$30.5M	$97.5M	$1.1M	$3.6M
Building Elevation	226	$/Asset	$29.9M	$69M	$1.1M	$2.6M

Section 6 – Recommendations, Grand Strand Example

Example recommendations from Grand Strand:

Authority Category	Implementation Timing	Recommendation For	Recommendation	Description
Activities and Areas Warranting Further Analysis	Mid-Term (5-10 years)	Multi-Agency Action	Horry and Georgetown Counties Flood Warning Systems Update	Create and enhance flood warning systems, including filling information gaps for the Intracoastal Waterway, and providing roadside warning signage for shallow coastal flooding dates.
Activities and Areas Warranting Further Analysis	Mid-Term (5-10 years)	Multi-Agency Action	Georgetown County Living with Water Development Management Study	Inventory and assess land management policies, regulations and building standards to achieve resilience.
Activities and Areas Warranting Further Analysis	Mid-Term (5-10 years)	Multi-Agency Action	Horry County Risk Informed Development Management Regulations	Local governments to create and strengthen policies and regulations to manage development exposed to coastal storm surge.
Activities and Areas Warranting Further Analysis	Mid-Term (5-10 years)	Multi-Agency Action	Socastee Policies and Regulations for the Conservation of Forested Wetlands	Create and strengthen policies and regulations for habitat protection and restoration that lead to preservation/conservation of swamp forests.
Study Efforts (follow-on USACE feasibility study)	Near-Term (<5 years)	Congress	Waccamaw River, Horry County, South Carolina (SC) – Flood Risk Management	Explore measures for flood risk management similar to the USACE federal watershed studies (Tar Pamlico and Neuse) being conducted in two watersheds to the north in North Carolina.
Study Efforts (follow-on studies)	Long-Term (>10 years)	Congress	Island of Pawleys Island FRM/CSRM study	The study would address wave attenuation, storm surge and nuisance tidal flooding as well as manage marshes to achieve resilience.

Comment Collection

Submitting Your Comments

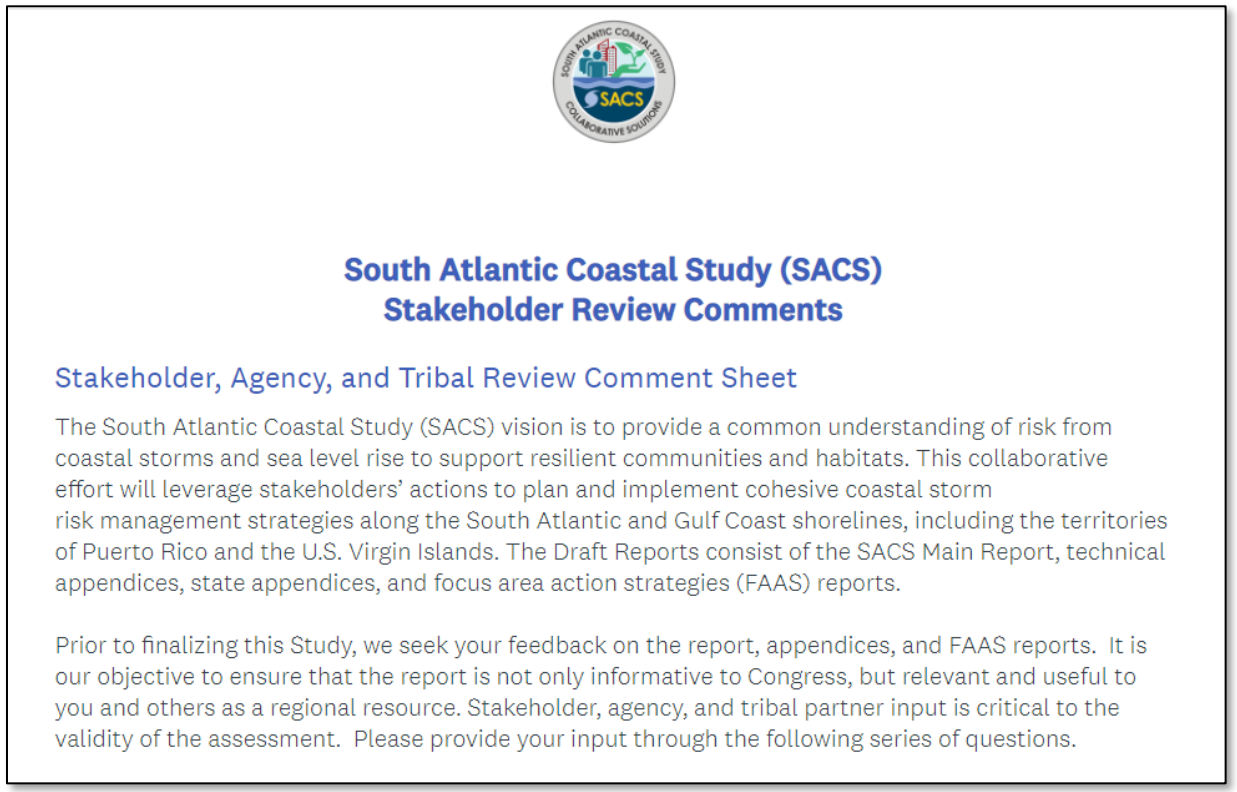
South Atlantic Coastal Study Main Report

Appendices

- Engineering Appendix
- Geospatial Appendix
- Outreach Appendix
- Alabama Appendix
- Florida Appendix
- Georgia Appendix
- Mississippi Appendix
- North Carolina Appendix
- Puerto Rico Appendix
- South Carolina Appendix
- U.S. Virgin Islands Appendix

- Link to comment form is on the SACS website
- Comments will be considered but not responded to individually
- Comment period closes **November 15, 2021**

https://www.surveymonkey.com/r/SACS_comments



South Atlantic Coastal Study (SACS)
Stakeholder Review Comments

Stakeholder, Agency, and Tribal Review Comment Sheet

The South Atlantic Coastal Study (SACS) vision is to provide a common understanding of risk from coastal storms and sea level rise to support resilient communities and habitats. This collaborative effort will leverage stakeholders' actions to plan and implement cohesive coastal storm risk management strategies along the South Atlantic and Gulf Coast shorelines, including the territories of Puerto Rico and the U.S. Virgin Islands. The Draft Reports consist of the SACS Main Report, technical appendices, state appendices, and focus area action strategies (FAAS) reports.

Prior to finalizing this Study, we seek your feedback on the report, appendices, and FAAS reports. It is our objective to ensure that the report is not only informative to Congress, but relevant and useful to you and others as a regional resource. Stakeholder, agency, and tribal partner input is critical to the validity of the assessment. Please provide your input through the following series of questions.

Requested Information

- Name
- Title
- Organization
- Town/City and State
- Approval to Contact
- Telephone Number
- Email Address

Comment Sheet

1) Numerous coastal storm risk management efforts are ongoing throughout the study area and cannot all be described or listed within the report. However, please provide any significant large-scale national, regional, state, or territory-wide efforts that are not mentioned and you feel should be considered for inclusion in the report.

2) Are you aware of data or reports cited in the draft report that have been superseded with updated information or reports/information not referenced?

3) Which finding(s), products, or information in the report could be most useful to you or your agency (if applicable)? Do you have recommendations on how it can be better organized or presented in the report?

4) Are there any other general comments on this report that you wish to provide?

Questions and Discussion

Looking Ahead

OCT 2021: Report Milestone: release of draft report for concurrent review

OCT 2021: District Draft Report Roll Out Webinars

JAN 2022: Incorporate comments into final report

AUG 2022: USACE South Atlantic Division approves final report

Thank You

ADDITIONAL INFORMATION
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Working Today to Build a Better Tomorrow